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THE

AMERICAN DRAWING-BOOK:

A

MANUAL FOR THE AMATEUR,

AND

BASIS OF STUDY FOR THE PROFESSIONAL ARTIST:

ESPECIALLY ADAPTED

TO THE USE OF PUBLIC AND PRIVATE SCHOOLS, AS WELL AS HOME INSTRUCTION.

BY

J. G. CHAPMAN, N. A.

"Any one who can learn to write, can learn to draw."

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INTRODUCTION.

"ANY ONE WHO CAN LEARN TO WRITE, CAN LEARN TO DRAW."

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ANY ONE WHO CAN LEARN TO WRITE CAN LEARN TO DRAW

and, as writing is not taught to those only who are destined to become authors, but as forming an essential part of general education, so is drawing equally important to others besides professional artists. To write —to draw a form or figure that shall be recognised as the representative of a letter or word, is one thing; and to be able to design, draw, or write such forms, upon principles of grace and accuracy—to understand the Art of writing—is another. Thus it is also with Drawing, another mode of expressing ourselves, not less useful or necessary than that by letters

or words. To draw a horse, that shall not be mistaken for a man, is one step; but to draw a horse, with all his just proportions and developments, movement and expression, is an Art to be acquired. Any one can make something on paper to look like a tree, a cottage, a road, a brook, or a mountain; but Art goes farther, and, as if to compensate for what it falls short of, invests the whole with a charm more impressive than the reality, even to the most simple-minded cow-boy, who may have gone that road or waded that brook a thousand times, unconscious of the beauty that surrounded him, until it was developed by the hand of Art.

Who has ever hesitated to teach a child to write, because it was not intended that he should be an author? How many regard the art of Drawing as being of no practical importance, as a branch of education, to any but professional artists; and consider it, in its most favorable light, as a mere accomplishment — a pursuit only for the man of leisure? The resources of our schools are often exhausted in "finishing" our youth with "every accomplishment;" laid on so lightly, that, for all real and practical purposes, they are as ephemeral as the gay tints of the painted butterfly. Smatterings of languages, living and dead, are heaped upon them, while the great, universal language, the language of Design, is forgotten; or only thought of in the production of some huge "castle and ruins, with a man and a boy with a stick; and a dog" — painted by the teacher, under the scholar's direction, to hang in the parlor, as the veritable, first, and last, and only production, of the latter: who at once assumes, therefrom, an oracular authority in all matters connected with the Fine Arts, and leaves admiring friends in wonder, at what "he might have done, had he not given it up." To such, it may be said, "You have never begun."

It is not only as a beautiful accomplishment, or a source of amusement for leisure moments, that the art of Drawing should be cultivated. It has its practical uses, in every occupation of life. It opens to all inexhaustible sources of utility, as well as pleasure; practises the eye to observe, and the hand to record, the ever-varying beauty with which nature abounds, and spreads a charm around every object of God's beautiful creation, unfelt and unknown to those who have failed or neglected its cultivation. It does more: it gives strength to the arm of the mechanic, and taste and skill to the producer, not only of the embellishments, but actual necessities of life. From the anvil of the smith and the workbench of the joiner, to the manufacturer of the most costly productions of ornamental art, it is ever at hand with its powerful aid, in strengthening invention and execution, and qualifying the mind and hand to design and produce whatever the wants or the tastes of society may require.

Many are deterred from attempting the art of Drawing, from an idea that they lack capacity, or, what the world calls genius. But have they ever made the attempt? Let them recall to mind their first steps in knowledge of every kind, and judge not unfairly of their capacity, until they have tried this also. Before they knew their A, B, C, they could tell a man from a dog, by the picture. The impressions of form are the first made on the infant mind; and were it taught, betimes, to trace these impressions on a slate, there would be few in the world incapable of speaking the language of Design. The untaught savage thus records the story of his battles; as the traditions of his fathers have come down to him from generation to generation. He directs the traveller on his way, by marks in the sand; tells him, by his rude outline, of mountains and rivers to be passed; and no one can mistake his meaning. Who is there, in civilized life, that may have been familiar with works of art from childhood, that can not do this? If he can, he can do more. He possesses the germ within him, and needs only proper cultivation, to bring it forth.

As in other arts and studies, all can not expect to be equally perfect, so all can not expect to rival the master-spirits in the arts of Design. The work of an artist is that of a lifetime of arduous toil and study. Of the thousands who delight themselves and their friends in music, how few have composed an opera, or even achieved the composition of a single air? Yet, what would the world lose, were none to attempt the cultivation of this refined and charming accomplishment, but those who devoted themselves, exclusively, to its pursuit! Were music neglected as a study by all except those who make it the business of their lives, even they would find few to admire and sympathize with them, in their greatest productions, for want of taste and understanding.

In the elementary portions of this work, the smile of the professional artist may be moved, when he finds the author dwelling on what some may think trifles, and giving instruction in the methods of sharpening a pencil and making a pen. But let him remember the day that that instruction might have helped even him. When the pupil in Drawing has attained a proficiency to place him in the position of an artist, his course of study will require a direction beyond the means of these pages to afford him. This he must obtain elsewhere, and pursue, with that fixed determination and singleness of purpose, by which excellence is only to be achieved; and he will find that, could all that he requires be placed at once within his reach, it would be, in a measure, valueless, for want of that strength to appreciate and appropriate such advantages, which is best acquired by patient search and progressive attainment. Short-cuts and easy roads to

knowledge give but little real aid to him who has a long and arduous journey to pursue; though it is scarcely worth while to hazard an experiment, by which the spirit may be broken down with toil, in a path into which we occasionally diverge, as a recreation, or an accessory to other pursuits.

From the delight, as well as profit, that awaits them, all may be safely invited and tempted to the study of Drawing. They may find difficulties; but they will find pleasures, also, of the richest kind. They will find flowers blooming along their way, and wonders opening before them at every step: nature unfolding her ample volumes, and displaying combinations of beauty and delight, beyond the power of words to tell them of. It will be theirs, to record the ever-changing pictures of earth and heaven; to give them body and form, in which others, less favored than themselves, may participate through them: theirs, to preserve the image of some cherished object long after it has ceased, in its reality, to exist—or, perhaps, to call forth some priceless treasure from the world of poetry and thought.

To those who have in view more than mere pleasure and amusement in the pursuit of the art of Drawing, may be fairly promised advantages that they will surely realize; and a portion of this work will be devoted especially to those who look to the application of the art to its most practical purposes. Most of the difficulties constantly felt by artificers in the execution of their handiwork, will be obviated, when the same hand that executes can design. Let our mechanics have their apprentices instructed in Drawing, and the effects will be soon evident in their work-shops. They will no longer depend upon foreign inventions, that are, after all, little adapted to the wants, tastes, and habits of our people. Let these wants be supplied by articles, at once more useful and equally ornamental, of home production. Let them learn to use their own strength, and their reward will follow.

The manufacturers of Europe are drawing closer and closer the connexion between the artist and the workman. At first, they borrowed aid; now they are acquiring knowledge for themselves. For the promotion of this object, schools have been long established on the continent, under government protection and support; so much importance is attached to their existence, as a measure of national policy. The influence of these schools was so strongly felt in England, to the detriment of English industrial art, that it became a subject of alarm to her statesmen. All the capital, energy, and strength, the superiority in material and mechanical facilities of England, could not contend against the higher excellence of her foreign rivals. As the voice of one man, her mechanics and manufacturers confessed the truth, and demanded

protection from the government — not by tariffs, but by education. Her legislators saw the evil, and at once applied the remedy, by the establishment of Government Schools of Design. These have been attended with such beneficial results, that there is now scarcely a manufacturing town in England that has not claimed, and shared, the advantages of provincial branches. Our mechanics can, and must, do for themselves what our own state and general governments have, hitherto, shown such indifference in undertaking for them. To no other cause than ignorance can this indifference be attributed. Were the rulers of our land, themselves, properly educated, they would not only feel the necessity of teaching Drawing in our public schools, but would be capable advisers and promoters of efficient means of carrying it into effect. He who writes himself, and has been endorsed, "Master of Arts," by our colleges, should at least know something about them; whereas, in most cases, the arts are subjects on which, above all others, he is utterly ignorant.

While foreign arts and manufactures have inundated our markets, to the detriment of our own enterprising mechanics, and politicians have convulsed the land with schemes, and plans, and measures of protection, all seem to have lost sight of one of the great and primary causes of the evil — the want of artistical education among our workmen. They are taught to read and write, to hammer and to saw; but to design — the first motive, the very genius of all arts — is utterly neglected. While it is so, we must compete with the old world, especially in the production of articles of taste, on most unfavorable grounds. The spirit of independence, that will one day cover the western continent, seems not, as yet, to have entered our workshops. We are, in this respect, comparatively, still a colony of Europe; borrowing and adapting, but doing nothing for ourselves; waiting for every novelty to cross the seas, to imitate it — creating wants by reproduction, and burdening society with anti-American tastes and caprices, instead of supplying them with objects no less useful for being beautiful. A few imported pattern-books, of little value, because not adapted to our purposes, constitute the resources in design, of most of our mechanics. Require them to make something to suit a given purpose, that shall be at the same time ornamental, and you ask an impossibility. Even if the workman may have a vague idea in his mind of what is wanted, he can not give it form: perhaps he may have the spirit to make the attempt, but he can not satisfy himself — all goes wrong — his pattern-books fail him; he looks around for something to begin from, and gives it up in despair; or, what is worse, produces some deformity that disgusts his employer, who will not venture on a second experiment, but sends abroad, and gets what he desires. Can the mechanic complain that home manufactures are not encouraged? Had he possessed even an elementary knowledge of

Design, he would have done better; had he cultivated and perfected that elementary knowledge, his difficulties would have all vanished, and the beginning and end of his labor would have been placed at once before him. Make them artists, or, better still, artist-workmen, and, with their proverbial energy, intelligence, and enterprise, no limit can be placed to what our mechanics may achieve.

A knowledge of Design, even in copying, gives great advantages. If he understands the principles upon which the original is produced, there is no fear of the workman committing offensive variations. How often do we see the most beautiful designs distorted into deformity by the variation of a single line; an error of ignorance that must continually occur, until our mechanics are better instructed in this branch of education. It is a vain hope, that a work so limited as this, will supply all the information the artisan should require; but should it lead him to make a beginning, he will so soon find his advantage in it, that he will be induced to pursue it farther. He will have his children and apprentices instructed; he will urge the establishment of schools and collections of models, to which they can be directed; and he will in his own time see the fruits, in the advancement of our manufactures to a degree of perfection that can never exist, without an intimate connexion between them and the Arts of Design.

There are those, of another class of society, to whom education in Drawing may prove a real blessing; whose painful and ill-repaid labors, to earn a scanty provision for themselves and families, have so often called forth our sympathies; and, while public feeling loudly declaims against the evil, no efficient remedy has been applied. Of the thousands of dependent females who are compelled to toil, night as well as day, to the destruction of health and life, and who are often tempted into paths of vice and misery by absolute necessity, how many there are who possess talent that needs but cultivation to secure them both respectability and support. The natural refinement and delicacy of the female mind renders it a fruitful soil, that should not be neglected or let run to waste, when its cultivation might realize such rich advantages, not only to themselves, but to their country. Give them the advantages of education in Drawing; begin in your public schools; let them carry it to their looms, to the manufacture of articles of taste and fancy, to their firesides, to the early education of their children;—and more, if they possess the talent,—let them take the pencil, the chisel, or the burin. Give them strength, by proper education, to feel what they can accomplish, and we shall soon see the broken-hearted victims of incessant toil worth the wages of men, in departments of industry and usefulness for which they are by nature so well adapted.

Of all people in the world, we stand most in need of knowledge in the Arts of Design. If in Europe, surrounded as they are by monuments of art, the accumulation of ages, it has been found necessary to make Drawing a part of common education, how much more essential is it here, where there is little or nothing of the sort. We must learn to think, and feel, and do, for ourselves. We must begin and carry out a new system of education in this respect; and, once placed in possession of a beginning, the energy and independent character of our people, so evident in everything else, will be made available to the cultivation of national taste in art, and the just appreciation of the sublime and beautiful. Art, in its higher efforts, will no longer suffer from the pedantry of travelled quackery, but will be elevated in itself, and elevated in its efforts, by the existence of a fair, honest, and intelligent tribunal. The cast-off frippery of European garrets and workshops will no longer find place beside our home productions in the Fine and Industrial Arts. The vast resources of mind and matter with which a bountiful Providence has endowed our land, will be brought forth to add to its national greatness; and, although we have no vast cathedrals or regal palaces to fill with pictures and statues, or adorn with works of ornamental art, we have a vast, an independent and intelligent people to appeal to: who need only to be shown the truth, to know and maintain it.

That a general taste for the Fine Arts does exist, however uncultivated it may be, is evident. Where is there the humblest cottage that has not its walls or mantlepiece decorated with a picture or plaster figure? However rude may be the work of art which hangs as "the bright Palladium" of the cottage, yet the household care bestowed upon its preservation, and the pleasure it affords by its possession and contemplation, show an appreciation of its worth, a decided taste, that, if cultivated, would lead to better productions; for the supply would assuredly be improved in character, in proportion to the demand. A wooden clock sells the readier for its picture, and more especially, if that picture touch a chord of national pride. Washington and Mount Vernon, although pictured with a most libellous pencil, have saved many a worthless machine from the rubbish-loft.

What village school-girl is there, whose ambition does not reach to the imitation of natural objects in needlework? and, although it may often puzzle the most acute to discover a rose from a tulip, or a cat from a squirrel, in her worsted-picture, yet the taste, the inclination—to try—is there. Could she be able to select subjects for imitation, from the boundless resources of nature with which she is surounded—could she have the means and opportunity afforded her, by proper instruction, of perpetuating, by her pencil or brush, the flower she has reared, the home she has

been happy in, the resemblance of friends she has loved, what a new source of intellectual enjoyment would be opened to her. And not to her alone. The influence of that refinement of sentiment and taste, that must ever follow, will extend throughout her life, and spread a charm about her, which will be seen and felt in all her associations, whatever be her destiny.

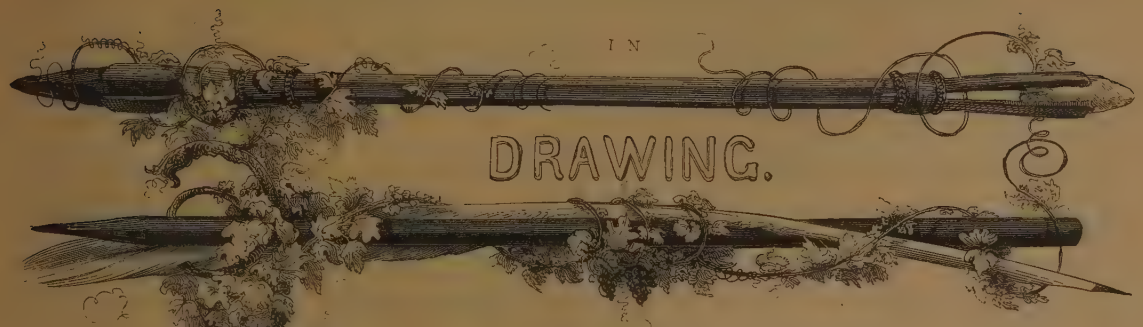
The importance of Drawing, as a part of popular education, and the want, so generally expressed, of some popular work on the subject, by which it could be introduced, not only into schools, but home instruction, has led to the publication of the AMERICAN DRAWING-BOOK. It is given to the public with the ardent hope that it may, in some degree, awaken an interest in a branch of knowledge that has been, hitherto, strangely neglected among the people of the United States; not so much from indifference to its importance, as from the want of efficient means of its acquirement.

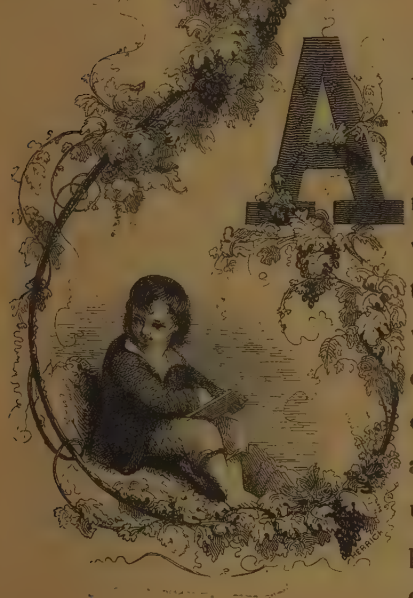
Of Teachers, all that can be required, is, to give it a fair experiment.

Of Pupils, is to be asked, a faithful observance of the course of study recommended — not to grow weary, if sometimes they find their patience taxed too heavily. Let them be assured, that nothing more is demanded of them than is believed to be absolutely necessary to their advancement. If, at any time, a doubt should arise in their minds, as to the utility of that which is required of them, let them persevere a little farther, and they will be satisfied. There are few secrets to teach: all must depend upon their own exertions. The business of the Guide is to direct their steps in the right way, and to supply them with such information as they may require in their progress, not to bear them on his shoulders. The correction of their own errors, and the knowledge of the means of their success, will supply the rest. One promise, in conclusion, can be safely made: the gain will well repay the effort. Let them not hesitate, for fear of failure, but be assured, that the measure of their success will be in proportion to their exertions. When once they have passed through the elementary studies of art, they will need no incentive beyond the reward they will receive in its practice — a new world of enjoyment, a new sense to appreciate its worth, will be their recompense, and they will never regret the day of their beginning.

CHAPTER I.

PRIMARY INSTRUCTIONS IN DRAWING.

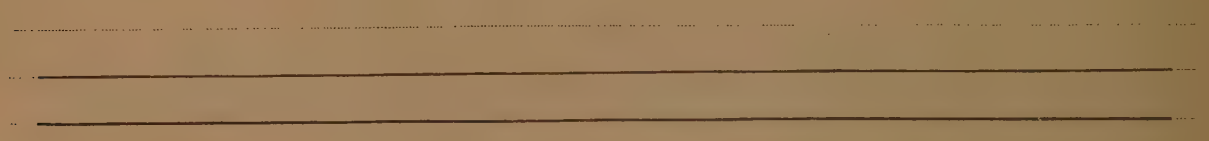


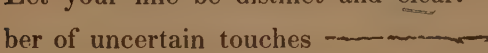
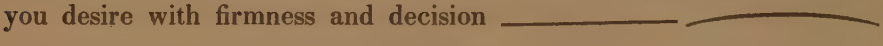


A FACILITY of hand is one of the first requisites in drawing, whatever instrument be employed, whether Pencil, Pen, Brush, or Modelling tool. Many are by nature endowed with a certain mechanical dexterity, or happy readiness with the fingers, to whom this facility is of easy acquirement; and all possess it, to a certain degree, or they could not be taught to write, which, in the beginning, is nothing more than the *drawing* of certain conventional forms, without any distinct idea of an object beyond the imitation of such forms. The first "pot-hook and hanger," is, clearly, *Drawing*. If the pupil has improved upon this humble beginning, so as to write a fair hand, he already, perhaps unconsciously, possesses an acquirement that will not only make easy his first essays in drawing, but essentially serve nim, however far he may extend its pursuit. Should this useful accomplishment have been neglected, he can not do better than practise his hand in the careful imitation of good specimens of penmanship, or place himself under the instruction of some good writing-master. The use of the pen has been too much overlooked by draughtsmen, especially by amateurs. It produces a certain line, and induces an early habit of care and accuracy, from the fact that it can not be easily erased. Many are falsely captivated by the spirited dash of a master, who overlook the means by which that ease and freedom have been acquired. It is the result of accuracy and labor; and to imitate the end, we should not shrink from the beginning. Let us lay well the foundation, before we begin the structure. He who starts with the black-lead pencil in one hand, and the Indian rubber in the other, will find, however convenient the latter may be, that he will soon fall into a loose and slovenly habit, of which it will be difficult to

divest himself. They are both good and serviceable in their places; but too often, in the hands of beginners, most sadly abused.

2. The first object of the beginner should be, to acquire a readiness in observing and forming simple lines, with their relation one to another, their direction, variation, beginning, and termination; also, to make a duplicate of any given line. Take, for example, a sheet of ruled letter or foolscap paper, and begin by tracing over the lines with a pen, from left to right, and from right to left —



Let your line be distinct and clear. Avoid a habit of feeling your way, as it were, by a number of uncertain touches  . Endeavor, at once, to express what you desire with firmness and decision  .

3. The system of these early lessons, to those who find it difficult to attain precision of hand, is of so much importance, that it is strongly recommended, especially for schools; where it should be commenced as soon as a child is taught to hold a pen or slate-pencil. By it the instructor will find his pupils more rapidly acquire a good hand in writing, as well as drawing; the eye, as well as the hand, thus being made progressively familiar with the observation and imitation of lines and forms. The drawing-master comes into our schools at too late a day. Every teacher can and may be one. A child knows its first letter by its form, calls its name, and remembers it, by that knowledge; and few there are, who can not make their letters on a slate, as soon as they know them in the book; rudely, it is true, but still in a manner to be understood. And yet this first impulse of nature is too often disregarded; the child is driven from that which might be to him a source of amusement as well as profit, and made, by the forced discipline of schools, to learn to read before he learns to write. "One thing at a time," may be a good adage for old heads, but childhood needs variety in its labors. Its mental exertions should be tempered by agreeable diversion, and, more especially, when that diversion can be made of lasting benefit. We may rely upon it, that the child, who loves his slate better than his book, will soon, by a judicious indulgence, learn to love them both together. The truant and the sullen prisoner to the school-bench would become the willing learner; and the early habits, thus acquired, of

observation and appreciation of the beauty and wonder of creation, will lead to a healthful thirst for knowledge, the truest and surest incentive to the study of books.

4. In view of the importance of this early education in drawing, as well as to assist teachers in carrying out the system proposed, there have been prepared Drawing or Copy-Books, ruled and headed, on each page, with progressive examples, similar to those which will be given in the course of these rudimental instructions. Thus, with little or no additional labor, teachers may at once, although possessing, themselves, no knowledge of design, be capable of affording the means of instruction to their pupils, as well as supplying their own deficiency, in an important, and too long neglected, branch of popular education. These Copy-Books may be procured of the publisher, at a cost little beyond the price of an ordinary blank book.

5. Having acquired a considerable degree of accuracy in tracing the ruled faint line, as suggested (2), proceed to fix certain points along the line, at random, and then connect them together; moving your pen or pencil (the former is to be preferred) slowly and steadily, and not taking it from the paper until the line required is completed —

Repeat this, from right to left, and from left to right, as in the first instance. After some degree of precision is thus obtained, you may, without fixing the points, endeavor to draw the lines, of the length required, by the aid of the eye and hand alone; and then, laying aside your ruled paper, see how nearly you can come to the examples given, on plain paper, on the slate or blackboard. Observe well, before you touch your paper, where the line is to begin, what direction it is to take, and where to terminate. When you can achieve this, with ease and accuracy, you have made a sure beginning; the importance of which will be felt and better appreciated hereafter, when, any amount of time and patience bestowed, in making yourself master of the principles and practice of these primary lessons, will not be regretted.

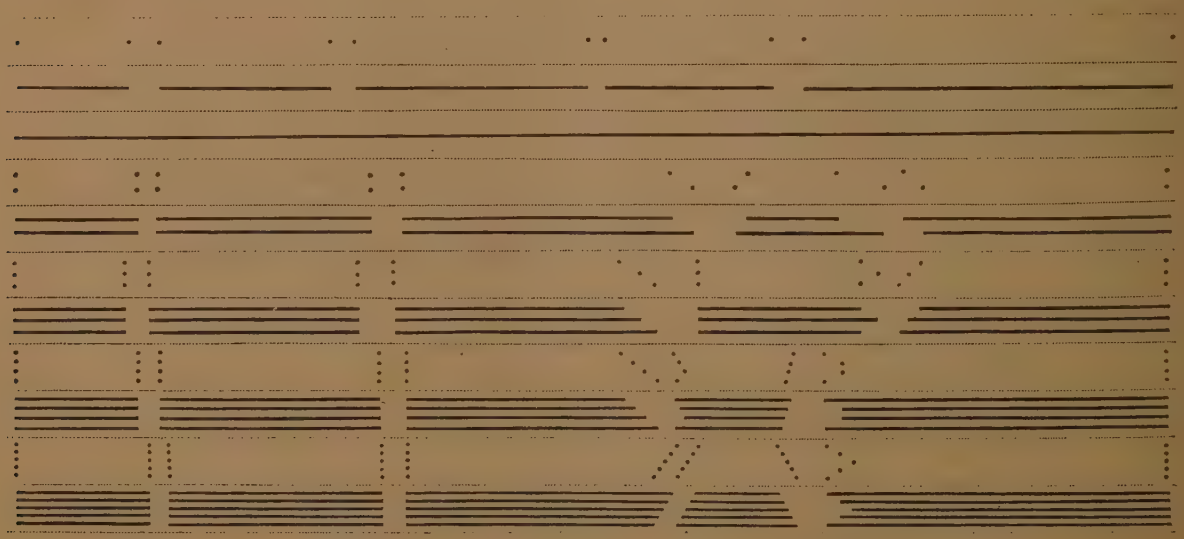
6. In your next effort, you have no longer to trace the ruled lines, but, to trust your eye and hand in drawing a line, as nearly as possible, in the middle :—

A difficulty will be felt, at first, in drawing continuous lines, of great length; as you will find

your hand liable to get the start of your observation, and stray from its proper direction. They should, therefore, at first, be short. Increase their length, as you gradually acquire facility and precision. When you find your pen going astray, as it is apt to do at first, leave off, and again seeking, by your eye, the true point to start from, make another effort; and thus, until you can draw a line extending the entire width of the page. Repeat the trial from right to left, as well as from left to right.

7. In this lesson, you have to keep two lines, besides the one you are drawing, under your observation at the same time. Simple as it may appear, it is one of much importance. You are already entering the broad field of Design, and are to consider yourself no longer a servile *tracer*. Here, let it be urged upon the pupil to avoid, in all cases, the pernicious habit of *tracing*. It is a tempting, but a dangerous expedient. No one can expect to attain proficiency in off-hand drawing, that relies upon it, even as a last resource. Early learn to trust and depend upon your eye and hand alone. They will serve you well and faithfully, when the clear pane of glass, the transparent paper, and the many other weak resources of weak hands, will fail.

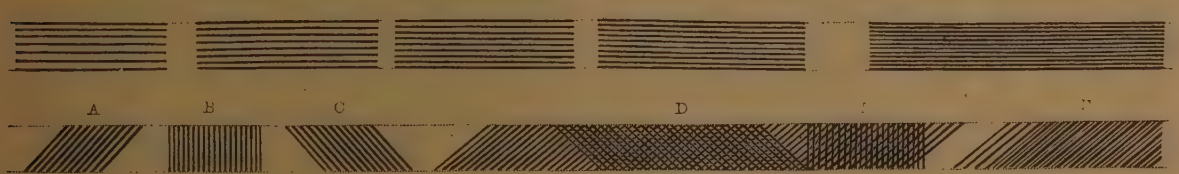
8. In like manner as in former, proceed with the following examples: First, pointing off the divisions or spaces between the faint lines, and then connecting the points carefully; bestowing as much time and practice on each example as your progress or improvement may render necessary.



9. Observe that, in adjusting the points, marking the divisions of the space between the

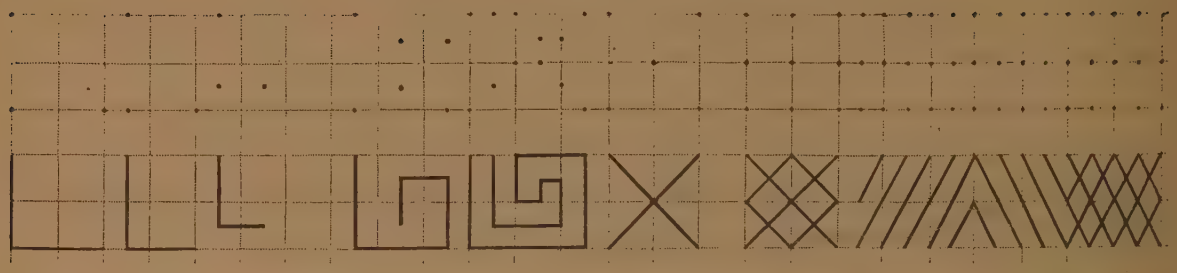
ruled lines, it will be easier to fix the centre point first ·; then the quarter ⋮, and subdivisions ⋮; and in like manner, where they do not begin from the centre, divide the space, first, by two points ⋮, and then by subdivisions ⋮. All this is of more importance than may, at first, appear: all tends to the acquirement of a habit of accuracy, and to the attainment of that facility of hand which is so essential. According as the pupil has more or less applied and perfected himself in these elementary principles, will he hereafter find ease or difficulty in more advanced studies.

10. The pupil may now practise the drawing of lines, gradually nearer to each other, until they form an even tint, without touching. In this trial, he will begin to feel the profit of his former labor; and, according to his success, can judge of his advancement in previous lessons.

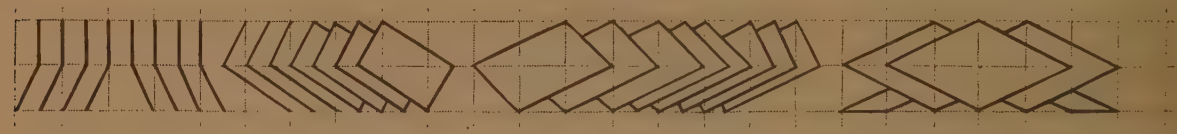


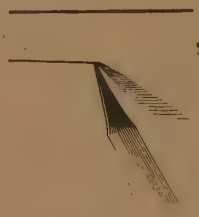
In the second example are lines slanting, upright, crossing each other, etc. A continued line or two, of each variety, is advised for practice. First, draw a set, as at A, entirely across the page; then proceed, in like manner, with B and C. Having succeeded in producing these, separately, with some degree of accuracy; begin again, and draw a set A; that done, proceed to cross them with a set of lines slanting in the direction of C, which will produce an effect as seen at D: and again, by crossing with the perpendicular lines B, will be produced E. In the case of F, first draw the lines as at A, and then a fainter interline between each one. In like manner, with advantage, you may proceed with B and C; only making them somewhat wider apart, to allow space for the interline.

11. Before proceeding with the examples that follow, attention should be recalled to what has been said in reference to fixing points, etc. (9). It will now be of much assistance to have paper ruled in squares; and if this can be done by the pupil himself, it will be all the better. If example 8 has been properly practised and understood, the following will be comparatively easy. In all, the lines form right angles, except the last, which presents, where they cross each other, what is called a lozenge.



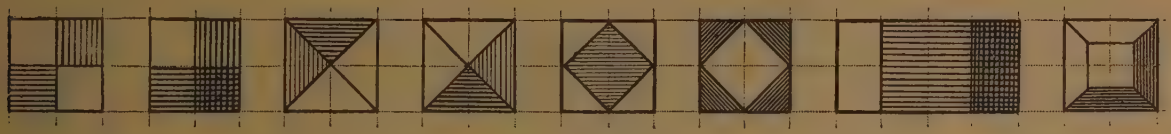
12. In drawing the following: first fix the points, and connect them as above; then proceed without them, endeavoring to determine their position by careful observation, and then expressing each line and figure with decision, unaided by the points beyond their imaginary existence.



13. The draughtsman should always, as far as practicable, keep his work before him; as in writing, we progress from the top to the bottom of the page. Of course, in drawing the general outline of an object, this would be, in a measure, impossible and improper; but, in forming tints, especially with the pen, care should be taken to avoid working over what has been done already, and which is, in some degree, the guide to what is to be done; as the pen or pencil, partially covering the lower lines, produces uncertainty. For example, it is easier to draw one line parallel to another, having the given line above the pen  , than if it were below it . The simple experiment made by the learner will at once convince him of this; and in like manner, he will find he can draw lines to express tints or shadows with much greater facility and accuracy, by keeping what he has already done before him , than by attempting, thus , to overreach it.

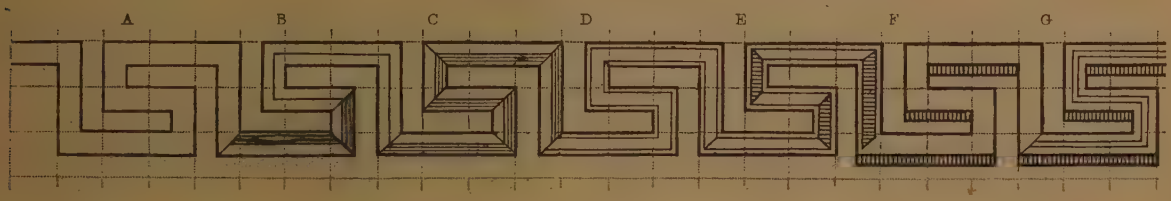
Besides, the liability of running, or blotting, one line into another, unnecessarily, is avoided.

14. The importance of acquiring a method in forming lines and tints, will be felt in the following examples:—



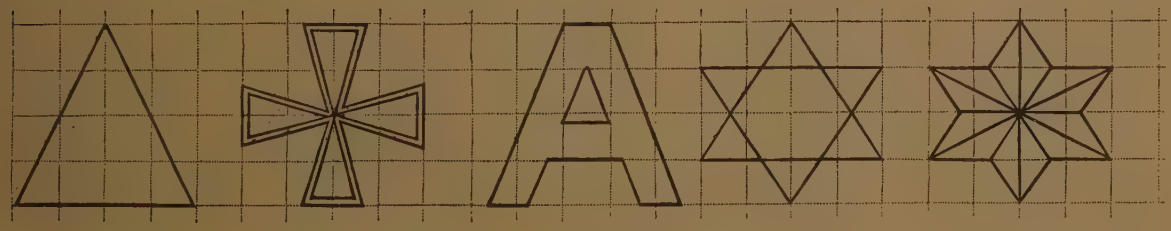
The pupil will also begin to appreciate the power of lines, in expressing tints, and in giving detail of form to simple outlines. In all of these there is one common outline, varied by divisions and tints.

15. The following figure, formed of straight lines and right angles, will show the importance of a clear and accurate outline; which, when once obtained, may be with ease worked into endless variations.



The pupil should first draw the simple outline of the figure A, upon the principles laid down in former examples (11). Having accomplished that, let him next draw the interline, as shown B; after which, he can express the tint or shadow on the figure C. Next, let him draw the faint line, near the inner edge of the outline (A) he has already done, as D: then proceed with E, and so on with F and G; always observing to draw the outline of the tint or shadow first.

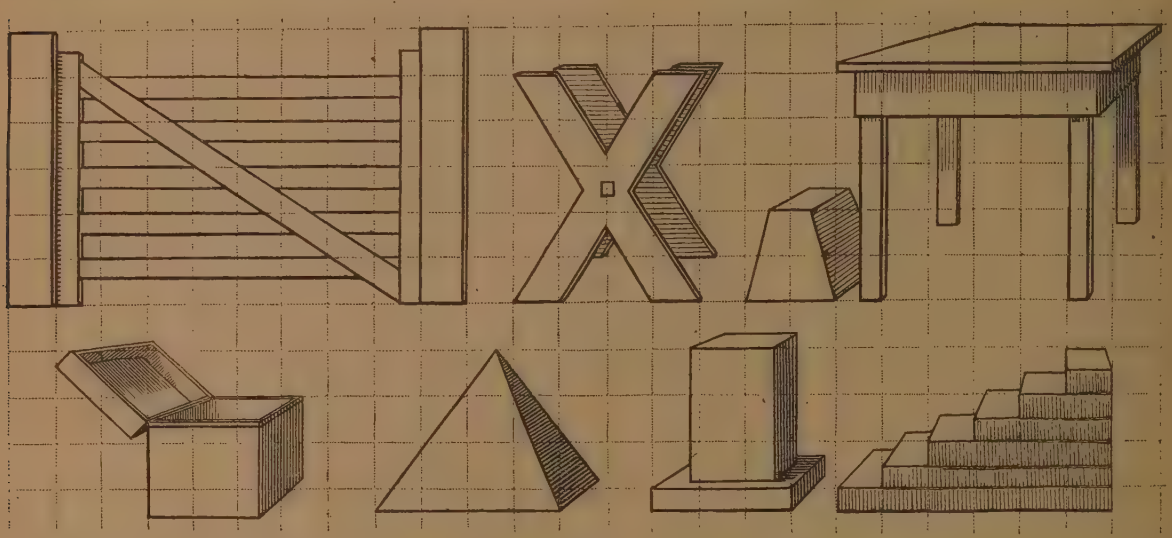
16. The following examples present forms of less simplicity, yet are equally regular and balanced in the relation of the parts to each other. They are given, not only for practice, but to



show the motive or method of their construction. If the pupil were to attempt to draw the fourth or fifth figure, for instance, by a mere outline, he would encounter great difficulty, and fail of

success; but let him study well the principle upon which that outline is produced, and he not only is able to draw it accurately, but knowingly. This principle of Design deserves important consideration; and will, hereafter, be often reverted to, when its true meaning and application will be better understood and appreciated by the learner.

17. One more example of objects formed of straight lines is added, to show, in some degree, the application of what has, thus far, occupied the attention of the pupil, and should be copied,



as carefully as possible, first on the ruled paper; observing well the parts or forms the lines present as they cross the dotted or faint lines; recalling to memory all that has been before said, especially with regard to the importance of ascertaining the point of beginning and ending, as well as direction, of each line. When some degree of precision is acquired on the ruled paper, try it without — on the slate — the blackboard — every way; and then try your memory, and see if it will serve you as it ought. See if you can draw a gate, a table, or a box, without the object before you. He who can draw nothing but what he has before him, loses the best half of the art. Begin at once in the right way — the surest to success. Unless the mind add the riches of its resources to the efforts of the hand and eye, and you call them forth as you are progressively capable of using them to advantage, you can never expect to reap the full harvest of your present labors.

18. Thus far, attention has been directed only to the drawing of straight lines; and, if proper care and study have been bestowed upon the principles laid down, and the hand

has been taught to keep pace with the understanding of these principles, the few examples to be given in the drawing of curves will be all that is required, before he is introduced to the great school of Art — the imitation of nature. Let him be advised not to hurry forward too rapidly — to gain strength as he goes — to confine his efforts to what he can accomplish, rather than run the risk of failure, in attempts beyond his power.

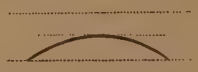
19. Again (2) let the importance of a clear, firm, and well-defined line be urged. "Think before you draw," is as important a maxim as "Think before you speak." Determine well the point of beginning and termination, the direction and form of every line, before you touch your paper. Now is the time to school your hand to this habit; which, when once acquired, will render progressive studies comparatively easy, and hereafter serve you well in your attempts, however far you may pursue the Art of Drawing. A manner of dashing off random lines or

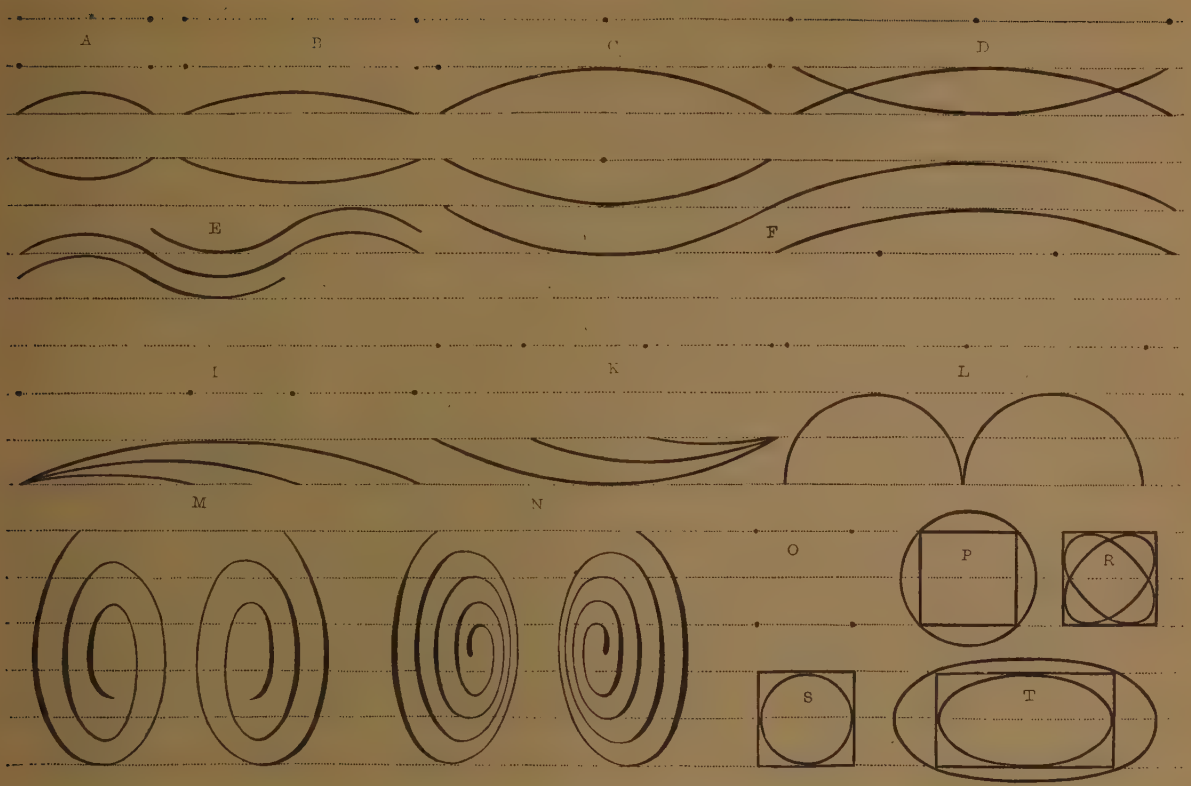
touches, as if in search of the true line, betrays weakness and indecision — besides, produces a painful display of the labor the work has cost. The ease apparent in the sketch of a master-hand, that is so captivating, is the result of absence of any appearance of hesitation or doubt. If any were felt, in its execution, it is a secret known only to the artist himself, who should always possess the judgment to look rather to results, than the ostentatious display of the labor of their accomplishment. The examples given will enable the student, by comparison, better to understand what is to be avoided.

20. In the directions hitherto given, with regard to the drawing of straight lines, the ruled paper afforded a more certain guide than it will be found to be in curves and irregular forms. The straight, or right line, must be the basis, however, upon which to form the true observation and delineation of them. A right line is certain and arbitrary; and, according to the variation of curves and irregular forms from a right line, must be measured their irregularity by the eye, and also expressed, the result of that observation. The faculty of ascertaining and expressing

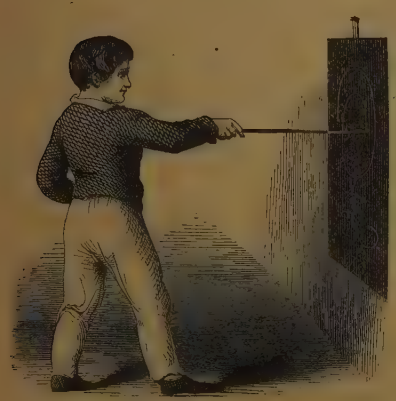
the degree and character of these variations, is a most important acquirement in drawing. Hereafter, in its proper place, more will be said in reference to circles, ovals, etc., as presenting the motive of lines and forms; but, it is important that the pupil should go step by step, and, as far as possible, master one difficulty before he encounters another.

21. Let him attempt to draw the most simple curve or eccentric line , and he will find it, probably, no easy task to perform with accuracy; and even if measurably successful, at first, to repeat it may be more difficult. But, if he has a right line from which to mark the variations , it becomes comparatively easy. To the beginner, a difficulty naturally will arise as to the existence of these right lines in objects in nature. The eye, by practice and proper education, learns to supply this, and soon becomes accustomed to measure irregular forms by this unerring standard. At present, it is out of place to enter, as fully as may be hereafter necessary, into the explanation of this principle in Drawing; which must be gradually developed to the understanding of the pupil, as he acquires progressive strength in the training of his eye and hand.

22. In the following examples for practice, the ruled paper will be of essential advantage. Begin, as in the exercises in drawing straight lines, by marking certain points along the ruled line (5), and then connect these points by curves sweeping at first to the middle of the faint lines, above  and below the points (example A). Repeat these exercises from right to left, as well as from left to right. It is important that sufficient command of hand, to draw lines in any direction with equal facility, should be early acquired. When you can do this with some degree of ease to yourself, as well as accuracy, increase the distance between the points, as B; and after that, draw a line of greater sweep C D: and so on proceed with the rest of the examples. E is but a combination of what you have already done A; and F of C D.—I K will be comparatively easy after these, as well as L. In examples M N, observe well the movement of the line as it touches the six faint lines, and the points it marks as it approaches its termination. It starts on the first ruled line, and, making a gradual sweep, turns on the sixth, moves upward to nearly half way between the first and second: again descends to half way between the fifth and sixth, moves upward to nearly half way between the second and third, and terminates between the fourth and fifth. In example N, the same observation, with some little variation, will apply. Endeavor, in the imitation of these



examples, to draw them with a clear, unbroken line, without taking the pen from the paper until it is done. Be not discouraged at repeated failures, but try again and again, until you succeed. You doubtless begin to find that you require more than the command of your fingers in drawing: your wrist, and the whole arm, must be brought under proper government. And here, as a valuable assistant, the blackboard can not be too strongly recommended.



23. Drawing on the blackboard might be made a profitable exercise and subject of emulation in schools. The chalk should be placed in a long port-crayon, or reed, held at arm's length; and the greater part of the examples contained in these primary instructions, should be attempted on the board—the larger the better. The examples P R S T are given expressly with a view to this. Let the teacher fix the points (o), if the pupil is not capable of doing it. The pupil then should connect the points, so as to form a square (s); that done, let him draw the circle within the square—another on the outside

of it (P)—and then try his hand at drawing a circle without the aid of the square. All should be done without rule or compass. "The compass should be in the eye," was the axiom of one who did more, and achieved more, in art, than any mortal man. Hereafter, in the study of perspective and mathematical drawing, their use will be indispensable, but now should be avoided. Remember that the eye, as well as the hand, should be educated; and to educate, you must practise and trust it.

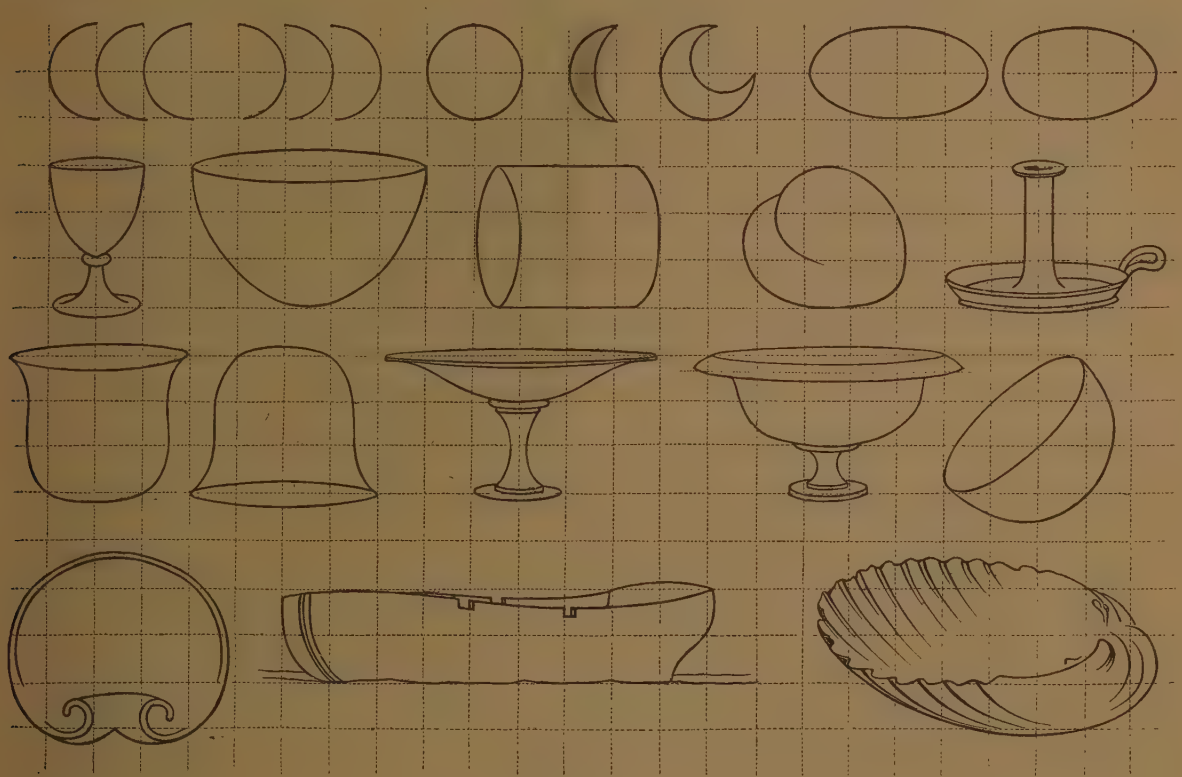
24. A story told of Giotto, the celebrated Italian painter, who flourished in the beginning of the fourteenth century, may not here be inappropriate. "When Pope Benedict IX. sent to Florence for specimens of the skill of the artists of that city, his messenger came to Giotto, and told him of the pope's intentions, which were, to employ him in St. Peter's church, at Rome, and desired him to send some design by him to his holiness, by which he might judge of his capacity. Giotto, who was a pleasant man, took a sheet of white paper, and drew, with one stroke of his pencil, a circle so exactly, that, 'round as Giotto's O,' became a proverb. Then, presenting it to the gentleman, he told him that there was a piece of design which he might carry to his holiness. The messenger replied, 'I ask for a design.'—'Go, sir,' said Giotto; 'I tell you his holiness asks nothing else of me.'—Giotto went to Rome ———."

This artist, who stood so high in his day, whose works are so justly admired, who rose to the esteem and friendship of the greatest men of the age in which he lived, whom Dante and Petrarch were proud to own as a friend, to whose memory, when dead, the city of Florence erected a statue, was once a poor shepherd boy; and, while tending his sheep in the field, developed the talent that made him what he became, by drawing his flock in the sand, and on flat stones.

25. Fathers and Teachers—call not your boys idle fellows, when you find them drawing in the sand. Give them chalk and pencil—let them be instructed in design. "But," you say, "I do not want my boy to become an artist." Depend upon it, he will plough a straighter furrow, and build a neater and better fence, and the hammer or the axe will fit his hand the better for it: for from it, no matter what may be his calling in life, he will reap advantage. Last, not least, you give him a source of intellectual enjoyment, of which no change of fortune can deprive

him, and that may secure his hours of leisure from the baneful influence of low and ignoble pursuits.

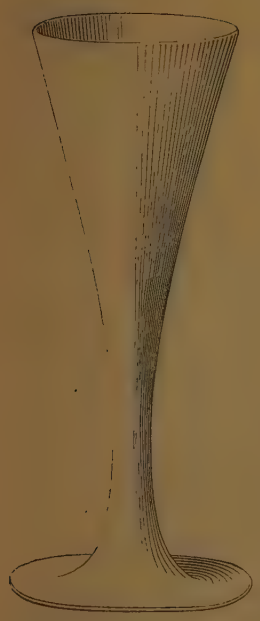
26. Again having recourse to the double set of ruled lines (11), as best adapted to assist the pupil in ascertaining the quantities of the variations of the forms before him, as well as drawing the two sides of an object alike, but little more is required than to give a series of examples for practice. The experience he has already had, will show at once their application.



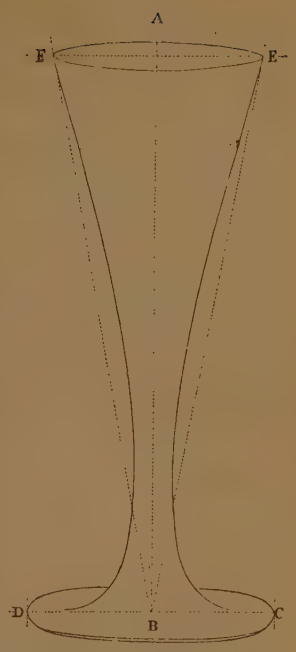
27. The pupil may now lay aside his ruled paper, and hereafter trust more to himself. It will be found, with some, that little difficulty has been felt, in the practice and understanding of the examples thus far placed before them. Even to those who may have, before this work has been placed in their hands, acquired some degree of facility in drawing, profit may be derived from examining the primary instructions here given. It often happens that we possess an acquirement, unconscious of the means by which it has been obtained, which will serve us to a certain extent, and no farther; which, by training, by strength derived from right discipline, may be made available to the highest results. This faculty, coming as a gift, too often proves an allurement from a

correct and systematic course of study; and thus wonderful boys become insignificant men, while others, of less actual capacity, get the start of them in a very little time, and soon attain, by industry, an eminence beyond the reach of indolent talent. Precocious talent, like hot-bed plants, rarely matures to fruitfulness, and, like them, is doomed to as short existence: which, however brilliant, bears no comparison with that of those reared in the fresh air, deep-rooted, developed by the early sun and showers of spring, and strengthened to resist all changes and seasons. In nothing is this more apparent, than in Design. Where extraordinary talent or aptness does exist, cultivation becomes more essentially necessary, than where there is an actual deficiency. Where a want is felt, a natural instinct impels us to seek the surest means of supplying it; and to persevere in its attainment we go on in a progressive system of acquirement, until it becomes a matter of habit. And this is the plain, straight-forward road to excellence, in which toil itself soon becomes pleasure. He who possesses it, will go farther and faster, in the end, than he who dashes headlong for an hour, faints at the first hill, or loses his way for want of proper observation and knowledge of his progress. It is lamentable to see how much talent is let run to waste, for want of judicious cultivation — with what ruinous results the blind praises of partial friends often hurry the beginner into deep water, before he has attained strength to bear him to land. They see too late the danger into which they have urged him. If they have the will, they seldom have the capacity, to aid and instruct him in his hour of trial. They shrink from the responsibility, turn their backs upon him,—and he is lost. The proverb, "*Poeta nascitur non fit*," is often quoted most wrongfully—and still more wrongfully is its received meaning applied to the artist. The day when men were born, like Minerva, full-grown and armed, is a matter of fable, not of truth. If men are born with capacities for poetry or art beyond the mass of their fellow-men, they must still be made poets and artists by study and education, or of what value are such gifts of nature. However exalted be the thought or imagination, it must be made to assume a shape by which it can be conveyed and understood beyond the mind in which it was conceived. Whether words, letters, or forms, be the means of expression employed, they must be intelligible; to make them intelligible, they must be accurately expressed, in a language not to be mistaken; and that accuracy is no man's intuitive possession. It is the result of study—of education.

29. In the example next presented, the principles upon which the primary instructions already given have been based, will be at once evident. Take, for instance, a form as simple as a common wineglass. To draw it with any degree of accuracy, without the aid of some well-understood principle, will prove difficult, even to many who are already familiar with the use of the pen or pencil. They may make something to look enough like a wineglass for any

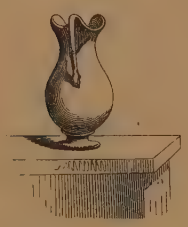


one to know what it is intended for; but to draw it in its exact proportions, with the sweep of the outline in perfect balance on either side; to make it a true representation of the object, some method must be used. Having fixed upon the height of the glass A B, decide upon the diameter of its base or stand D C, and that of the top E F. That done, you have sure starting points; and nothing more remains, to complete the outline, than first determining, by your eye, the variation of the curves it presents from these right lines, and expressing them exactly as you have already done in the examples before given (22). With the straight lines B E—E F to guide you, the gradual taper and expansion of the object is readily expressed by one clear sweep, easily obtained and repeated.



30. The first and greatest difficulty of the beginner will be to find and see these imaginary straight lines in objects presenting, in their form and outline, only curves. This must be acquired by judicious training. By practice and observation, the eye will soon learn to find them out, without mechanical aid. Let him, as a first experiment, for instance, hold a thread, with a slight weight attached to it, at arm's length, between him and an ordinary water-pitcher, or ewer, and he will at once see all the perpendicular lines he desires, drawn, as it were, against the pitcher by the thread. They will show him the relative variations of all the curvatures of

the outline as distinctly as if drawn on paper, and as easy of imitation. He will not only have a guide in drawing the sweep of the outline correctly, but, also, in marking the true proportions of the object. He will find the line D produced by the thread, drawn, as it were, against the pitcher, touching its lip and greatest circumference; while B and C, in like manner, serve to show the relative proportion of the stand or base to the neck. A, corresponding to D, gives him something to go by, in producing the general form with relative regularity, and marks the variation, first seen where the handle begins. It then serves to ascertain the true form of the handle, as well as to designate the place of its lower joining with the pitcher. Thus, to show the principle. A thread and weight are not always at hand; and if they were, they do not serve as well as the instrument with which we draw. Hold a pencil at arm's length, look along its outline, and in like manner you may readily ascertain the bearing, not only of the perpendicular lines, but of any others you may desire, either for the purpose of studying your outline, or of proving it after it has been drawn. You can thus, in a measure, be your own master, and correct your own mistakes. You may not see the practical draughtsman have recourse to such expedients; but, nevertheless, he is governed by the same principles. He sees, at a glance, the relation of the parts to one another. Although he does not draw the perpendicular lines, he sees that the swell of the largest circumference of the object before him extends no farther than a perpendicular line, drawn from the lip, would touch. He sees that where the base is united to the pitcher, it is just as wide as at the neck. He sees the base is a little wider. He marks all these points; if not on his paper, they are mentally before him; and he produces, with apparent ease, a correct drawing of the object, so just in all its proportions, that a potter shall produce a fac-simile of the pitcher, from the drawing. Such facility any one of ordinary capacity may acquire, who will take the pains and study required.

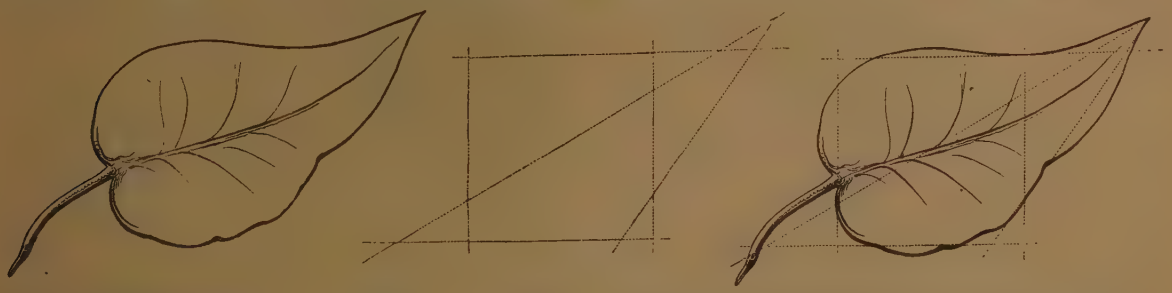


31. Let it not be understood, in saying this, that every one can learn to draw like Michael Angelo, or compose with the grace and charm of Raphael, any more than he who writes with grammatical accuracy, can, therefore, write like Shakespeare. There is a barrier that none can pass, who are not the gifted children of genius. Such men may have shone less brilliant in the first steps of that knowledge, by means of which they achieved their greatness, than many a school-fellow—

"with his satchel
And shining morning face, creeping like snail
Unwillingly to school,"—

whose fame ended in the village church-yard, or the memory of a few short years. Although the seeds of knowledge fell on a soil that was not warmed by the fire of genius, and brought forth but their usual harvest of every-day utility to their possessor, yet was that knowledge no less valuable to him, because he had not the power to use it, as it was used by the more highly gifted companions of his youth—to build upon it an imperishable fame, and blessing the world with rich gifts, to live for ever in its memory.

32. It is now time for the pupil to look to nature for objects to exercise his skill, and to endeavor to apply the instructions he has received, practically. Let him lay before him a leaf



of the simplest form, and attempt to draw it. Having carefully studied its proportions, the directions and terminations of its principal lines, and decided on them, as above shown, by a sort of diagram, or generalized idea, he should then proceed to draw in the outline, with all the features and variations of the original. In doing this, all appearance of straight lines and angles should be avoided. There are none in the original, and there should be none used in its representation, beyond their application in assisting him, in his early efforts, to fix the points and proportions in their proper places and relation to each other. Even these must be dispensed with, as soon as the eye and hand can be taught to work without them.

33. The preceding example of a grape-leaf may be found more difficult at the first trial, from the irregularity of the outline. By keeping in view, however, the general movement of the line, after a little practice, the pupil will find the difficulty gradually decrease, and he will be able to draw it with accuracy, with regard both to its general form and detail.

34. Many have found this principle of working from straight lines, serve them so well, that they have been led to its abuse, by extending it beyond its proper application; and their drawings present more the appearance of an angular congelation of crystals, or irregular brick-work, than the easy, flowing lines, that abound in objects of nature.

Even in the sketches of artists of eminence, this *manner* is often perceptible, from the habit they have of massing, or blocking out, as it were, their figures; which, however allowable and proper in a master-hand, is, nevertheless, to be avoided by the beginner, until he acquires sufficient strength and knowledge to hold a master's pencil. When once he possesses sufficient knowledge of the principles of design to be able to express a thought, unconscious of the method by which he does it, with a hand and eye in perfect obedience to his conception, it matters little what his *manner* is. It will always be intelligible. Then he may dash as he pleases, and even the most random line will be to the purpose. But this facility can only be acquired by systematic accuracy in the beginning. The man who would ride a race must be used to the saddle, or he risks its loss, as well as his neck, in the attempt.

35. Before closing these Primary Instructions, let it be understood, that, although all may derive advantage from their perusal, they are especially intended for those who have as yet made no advancement in drawing. Their purpose is to show an easy and certain course by which ***any one*** may make a beginning, and qualify his hand and eye to enter upon the broader field

that lies before him. The want of knowledge of the proper means of making a beginning, has prevented many from attempting the art of drawing, while others have regarded it as a mystery, only to be reached by a gifted few. It is time this delusion should be dispelled. There are no secrets in art that can not be attained by those who will take the pains necessary to their acquirement; and although, as has been before said, all must not expect to rival those, who, aided by the gift of genius, have achieved such wonders by its means, yet the profit and pleasure that will be their reward, however far they may extend the pursuit, are well worth the trial. That a sense bestowed upon us by the Creator, susceptible of so much real benefit, as well as enjoyment, a capacity belonging exclusively to the human mind, should lie buried for want of cultivation, is a sad reflection — one that well deserves the serious consideration of Parents and Teachers, who are called upon at once to set about the work of reformation. Surely they will not hesitate, when no great sacrifice of personal convenience is asked of them. Let them look back on their own life, and see what they have lost for want of this cultivation; they will see much, but the real extent of their loss they can not know; for, without that faculty of just perception imparted by a knowledge of design, we walk through life as one blindfolded. It may not be too late to try themselves; the germ may yet exist, though long buried and neglected. If the spring-time of life is passed, and the summer is on the wane, it may yet be made to bear some fruit well worth the culture. If nothing more, the trial will prove to them the value of what they have lost by neglect, and they will earnestly look to the better instruction of their children and those under their charge. Instead of interfering with other branches of education, drawing can be made to assist most essentially in their advancement. Who thinks of teaching geography without a map?— and a map is a picture. The world is presented to the mind of a child by the map. To countries, cities, seas, and rivers, are given *forms;* and thus he remembers them. How much more impressive would these forms be, if he were taught to draw them. Pictures and Design may be made, if properly applied, valuable assistants to the teacher in all the departments of learning, from the primer upward — even to the classical and higher studies of our high schools and colleges. The tasks of the school-bench would thus become less arduous, and their benefits more enduring, while a purifying taste would be at the same time a natural result; for it is impossible that a mind, thus trained, should not early be capable of just discrimination, the basis, not only of true taste, but of all that refines and elevates the moral excellence of man.

36. As yet, nothing has been said of the materials used in drawing, because it is a matter of little importance what instrument is employed in the beginning. Giotto's stick for a pencil, and the sand for his paper, were as good an outfit as he needed. A piece of charcoal, or chalk,

and the barn-door, have served many as well; while others, who have accumulated a complete magazine of materials and patent nostrums, have done nothing else. The hand and eye that direct it, not the instrument itself, must be the strong reliance of the draughtsman. He should early learn to consider his tools as of secondary consideration, and to supply them as he feels their want and his capacity to use them. Instead, therefore, of giving at once a long catalogue of materials used in drawing, such as are progressively required by the student, will be mentioned in their places.

37. The Pen is placed first, because it may be justly considered the most important instrument for the general purposes of Design, and if its use were properly understood, it would be oftener found in the hands of draughtsmen. It is always at hand, gives a certain and indelible line, and is capable of producing the most finished effects. If all who write possessed the power to express what they desire by design, when the resources of language fail, what a new charm would be added to the epistolary intercourse of friends;—how much richer and more valuable would be the traveller's journal—the lucubrations of the man of science; and the page of poetry would present visions from the world of fancy in all the beauty of their original conception. Thus might this familiar instrument be made to do its full office, if we would only take the pains to acquire a command of it. That one capable of describing a scene, whether of reality or of the creation of the mind, so truly, that another can make a picture from it, could not draw it himself with greater truth, if he had been as well educated in design as in letters, is as certain as, that, if he possessed this two-fold power of expression, he would naturally be led to use each as they could be made in their turn most subservient to his purpose. The author and designer would thus be one; and with the facilities that exist of reproducing and printing designs, as readily as letters, the limits to which the influence of the pen may be extended, are beyond conception.

38. The best pens for fine and finished drawings were formerly made of crow-quills; while, for larger and bolder works, the ordinary goose-quill, and even reed, have been employed. The late improvements in the manufacture of steel and other metallic pens, have, in a great measure, taken their places; and these may be generally employed by the draughtsman, who, by trial, will soon learn which kind best suits his purposes. Many, however, have not the advantages, enjoyed by those who reside in the cities, of a variety from which their selections may be made; and after all, in many instances, they may require to make their own pens; which they should be capable of doing, under any circumstances.

39. The quill should be scraped on the side where the split is intended, first toward the point, and then backward, more or less according to the flexibility of the nib required; then cutting off the ends , and placing the left thumb on the spot where you desire the split to stop, which its pressure will effect, start the split slightly with your knife, and run it up the quill by a touch with the thumb-nail of your right hand, or the uncut end of another quill. The general rule is, to cut the shoulders the length of the split, and for writing, it is a good one; but in drawing, it is necessary to vary from it, and to suit the length and shape of the nib to the use for which it is required. The right nib, as you hold the pen, should be a little longer than the other, to produce a delicate line; and often it may be requisite to increase its sharpness, by slightly trimming the point in front, as figured. A little practice will soon teach you, not only to know what sort of pen you require, but to make one to suit yourself, as well as render you capable of exercising proper judgment in selecting steel or other pens.

40. The best Ink, for nice purposes, is Chinese or Indian ink, rubbed down with water, to the proper degree of fluidity, in a small saucer or cup. Some, who are very particular, prepare the burnt tips of candles, collected carefully before they fall in burning, and mixed with gum-water. There is also an ink, of recent invention, in every respect equal to Indian ink, and possessing the advantages of being always ready, and in a fluid state. It is made by Stephens, of London, and called "Mechanical Drawing Ink." It flows freely from the pen, is of uniform tint, and does not corrode or in any way injure metallic pens. It can not fail to prove a valuable material for the draughtsman, if its more general use does not induce a deterioration of its quality. Care should be taken in its selection. Indian ink is always best, when it can be procured as imported direct from China. There is no economy in purchasing an inferior article: a stick of it will last a long time, and is not worse for age. The best quality is generally strongly scented with musk. Common writing ink, for ordinary purposes, and for beginners, answers very well: it should be perfectly black. Metallic, and all other pens, should be wiped clean, after use, and laid away carefully. Pens frequently, by accidental wear, acquire a

peculiarly delicate and serviceable point, that should be preserved, as it will be often found no easy matter to obtain it so well in a new one, when wanted.

41. Sepia is of a rich brown tint, resembling very closely Indian ink, in its working qualities, and flowing freely from both pen and pencil. This pigment is named after the *sepia*, or *cuttle-fish*, which is called also the *ink-fish*, from its affording a dark liquid used as an ink by the ancients. The Roman sepia, prepared in cakes, has the best reputation; and it is rarely met with of inferior quality, — its cheapness leaves no inducement for its adulteration.

42. Black-Lead Pencils are in most general use as instruments for drawing; and are not only valuable, from their convenience, for sketching from nature, but well adapted for highly-finished drawings, being capable of producing the most delicate, as well as the most intense shades and tints. The best sort should always be purchased. The quality of black-lead pencils can be easily tested. When pure, the lead will be found to cut freely on two opposite sides, and harder on the other two. In using such pencils, the draughtsman can, by turning the pencil as he desires, produce a light or dark line. Beginners are generally too fond of using the knife, and often, by its awkward application, sacrifice a whole pencil, before they get a point to suit them. The wood should first be cut away with a sharp knife, scarcely touching the lead ; and then, instead of cutting away the lead downward, toward the point, which is the common practice, trim it upward, being at the same time careful of cutting away the lead near the wood, or it may be so much weakened as to break off at the first touch made on the paper. A small flat file is a still better instrument than a knife, and should always be used with an upward and very slight stroke. Extremely sharp points to pencils are, however, unnecessary. A practised draughtsman manages to keep his pencil in order, by occasionally turning it so as to preserve it partly blunt for tints, and, at the same time, with an edge for a sharp touch, when desired.

43. The best black-lead pencils in use are those made of pure Cumberland lead, cut into strips, and enclosed in red cedar. When proper care has been taken by the manufacturer, in

assorting the leads according to their hardness, the draughtsman will soon learn to know by their marks the kind he requires. Those marked H, HB, F, and EF, serve best for sketching, general drawing, and outlines; and those marked B, BB, and EHB, for shading; while HHH, and HHHH, are best adapted for architectural designs, and drawing on boxwood for engravers—a subject that will be hereafter treated upon to some extent.

44. There are other inferior kinds of pencils, that come mostly from Germany and France, which serve for many purposes even better than those made of pure plumbago. They are made of a composition that can not be erased with Indian rubber as readily as the others; and, from that fact, drawings made with them are less liable to be rubbed out, or injured in handling. Many object to them on this account; but the less the student of drawing has to do with Indian rubber, and the sooner he learns to do without it, the better. They do not produce such delicate tints and gradations, but, nevertheless, are serviceable. They work best on paper that is rather rough, or that has, what artists call, a good tooth. On unsized paper, such as is used for copperplate printing, they will be found to work admirably. Their numbers, generally from 1 to 5, indicate their degree of hardness. Practice and experience will soon make the draughtsman familiar with their power and use.

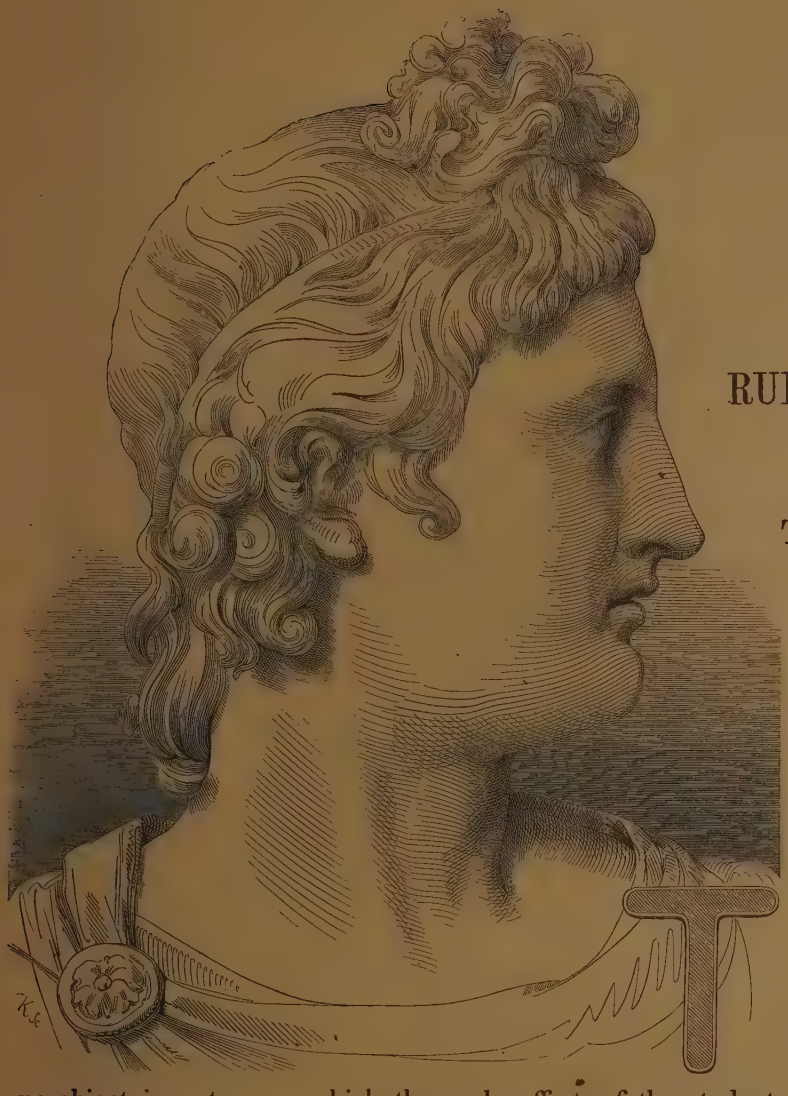
45. A small box, made of paper or some light substance, should be kept on the drawing-table, for the purpose of receiving the cuttings of pencils or crayons. A habit of neatness should be early inculcated. Many a drawing has been spoiled, and the pupil made ashamed of it, for want of proper attention in this particular.

46. The French Crayon is much used in making finished drawings. It can be procured of various degrees of hardness, should be pointed, and used much in the manner of the black-lead pencil. It does not work well on smooth paper, requires a port-crayon to hold it, and can only be erased by a pellet of stale bread—Indian rubber will not do. Its use on tinted paper will be hereafter alluded to.

47. The pupil being now in possession of sufficient materials for commencing the Rudiments of Drawing, the necessity of going to work not too hurriedly is urged upon him. Consider well what you have to do, before you begin. Endeavor to make not a line or touch that is not to the purpose. If you can not satisfy yourself on the first trial, be not disappointed, but try again—and again. Recall to mind the errors you have made in the first attempts; keep them

by you, that you may often refer to them. In your next trial you will do better. You will have advanced a certain step; and onward will be your progress, as surely as you persevere. Never fatigue yourself over your drawing. The moment you work without a will, it should be laid aside.

48. Last, though not of least importance, let it be urged upon the pupil early to acquire a good position in drawing. It should be easy, and in no way painful to the chest. There is no necessity for leaning over your work in an ungraceful or painful attitude. The eye should be, as nearly as possible, directly opposite the centre of your drawing. It is unnecessary to give directions as to the manner of holding your pen or pencil. Your own judgment must direct you as to that. It matters little, so that you feel the instrument fit your fingers easily. If proper attention has been bestowed upon the primary instructions given, you have already learned the importance of depending, not solely on your fingers, but also on the action of the wrist and arm. The hand should not be suffered to rest on the paper on which you are drawing, if it can be avoided; but have a spare piece to lay under it, while at work. It will serve another purpose—to try the points of your pens, pencils, crayons, or tints upon. Begin at once your portfolio. Even when you have failed in any attempt, you should keep it by you. Destroy nothing that you do, and you will soon learn to do nothing you would desire to destroy. Preserve order in the disposition of all your materials: much time and vexation may be saved by it; and, above all things, remember, WHATEVER IS WORTH DOING, IS WORTH DOING WELL.



CHAPTER II.

THE

RUDIMENTS OF DRAWING

THE HUMAN HEAD.

—'If we wish to ascend to the top of an edifice, we must be content to advance step by step, otherwise we shall never be able to attain it."—LEONARDO DA VINCI

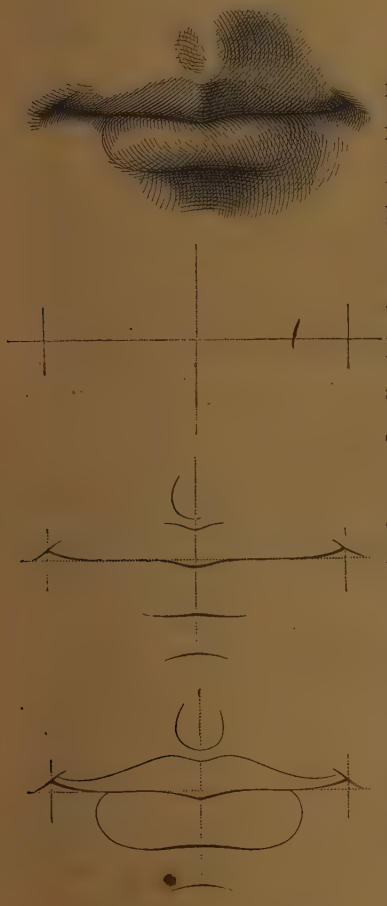
THE first impulse of all beginners is to attempt the delineation of the human face, and generally as seen in profile, because it is easier thus to express the actual form of the features;—and, there is no object in nature on which the early efforts of the student of design can be more deservedly and profitably bestowed. In nothing else are combined so many elements of beauty and expression, such established and well-defined principles of form, and happy adaptation of that form to purpose—in short, such perfection of Design—and he that can draw the head with accuracy and knowledge, in all its details, is a master of the art. As a general standard of beauty and expression, the conception of man reaches to nothing beyond it. In his dreams of angels and beatified spirits he can go no higher, and the demons of the imaginary world bear its impress, however distorted or debased. Always before us, always subject to our scrutiny and observation, always exciting a deep interest and best remembered of all other objects, possessing

in itself the great and leading principles of design so admirably developed, it should call forth the earliest and most devoted study of the draughtsman. No matter what may be his purpose in the study of design he must learn to draw the human figure.

50. What has been said in reference to drawing curved and eccentric lines is most forcibly applicable to drawing the figure, for there is not to be found one straight line throughout the whole wonderful structure of animated creation. Without some standard by which to form the judgment and direct the hand in the delineation of such forms, which are often so delicately marked as to escape the notice of the student, in his early efforts, he labors in the dark, and more often succeeds by chance than by that knowledge which alone can insure repeated success; which gives continually-renewed strength for higher exertions, and leads surely onward. On chance no reliance should be placed; it may serve once and never again; and a success thus achieved often brings with it more injurious consequences than a failure, by creating a fictitious confidence, from which we are unwilling to descend to the study of the first principles, the grammar of the art. Let the student be reminded of the maxim of Leonardo da Vinci that, "in order to acquire a true notion of the form of things, he must begin by studying the parts which compose them, and not pass to a second till he has well stored his memory, and sufficiently practised the first: otherwise, he loses his time, and will most certainly protract his studies—and let him remember to acquire accuracy before he attempts quickness."

51. It is not enough that the pupil should be able to draw an object before him, but he should understand and learn to remember its form and character. Let him not deceive himself with the idea that he is doing much when he is filling his portfolio with hasty, unfinished, and unstudied sketches. Sketching is to art what short-hand notes are in writing and equally valuable; but we should no more think of teaching drawing by the one than writing by the other. One single effort executed with care and study is worth all the time and labor bestowed upon it, and will in the end more surely promote his certain advancement. It is for this reason that the pen is so strongly recommended as the best instrument for the beginner. Its use may present difficulties, at first, but he who is earnest in his desire to become a proficient draughtsman, may rest assured that this commonplace instrument can do him more good service than any other. The precision and facility of hand and certainty of touch that he will acquire by its early and single use will enable him to wield the crayon or the brush, the graver or the modelling tool, the chisel or the hammer, hereafter, with a command that will amply repay the labor of his present efforts to become familiar with it. Is his hand tremulous and disobedient to his will, the pen will

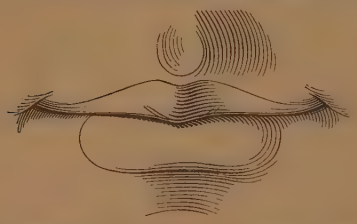
make it firm and well-trained; and nerved to its use, he will possess an unlimited command of all other instruments. The pen admits of no indecision. We are compelled to consider well what is to be done, and then to do it with an unerring line or touch—and a failure can only be remedied by retracing our steps and another attempt. That failure is a lesson not soon forgotten, and many such will soon induce a habit of accuracy which is rarely acquired through the tangled confusion of lead pencil and Indian rubber. What is done with the pen can be done again, and there lies one of the great secrets of excellence in design.



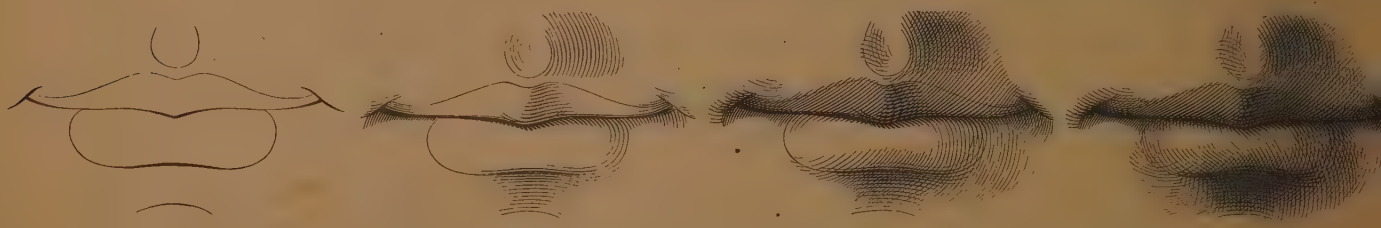
52. As the easiest to draw, and that which, probably, will show most clearly to the pupil the principles upon which he must rely for accuracy, let him begin with a full or front view of the Mouth; and before making any attempt at expression he should become familiar with the actual form of the features, and be capable of delineating them knowingly. The first thing to be done is to get the beautiful line produced by the meeting of the lips. On a straight line first indicate the width of the mouth, and then the centre, either by dots or faint lines; (8) then proceed to express these points with due reference to the true form of the object; after which indicate in the same way the thickness of the lips, etc. This done with care and precision, to connect the points and to produce a correct outline according to the form of the object you are imitating (22) will be found comparatively easy; and with a correct outline you have a sure foundation upon which to proceed in the completion of your drawing. Before advancing farther, however, the trial should be repeated, until the pupil is able to dispense with the straight lines and to produce an outline without their assistance, beyond their imaginary existence, by which he will soon learn to preserve the proportions and the relations of the parts as readily as if they were drawn on his paper. This step at off-hand drawing, should be carefully taken, practised, and studied; for the same method and principles are applicable to the correct delineation of all objects. Should the pupil grow weary in his efforts to attain a correct outline in this example and feel discouraged by repeated failures, let him as a relaxation try the outline of any one or more of those that follow, without attempting to express the shadows. With many this page may be remembered as one of

toil, but according with the recollection of it, will be the ease or difficulty of their progress hereafter.

53. Having succeeded in becoming proficient in drawing a correct outline, next proceed to express the shadows that give rotundity, and farther develop the form of the mouth. Begin with

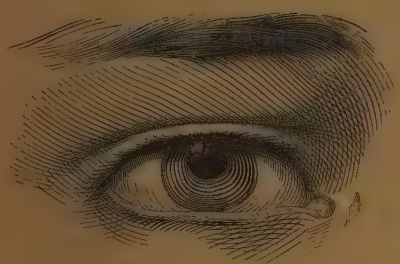


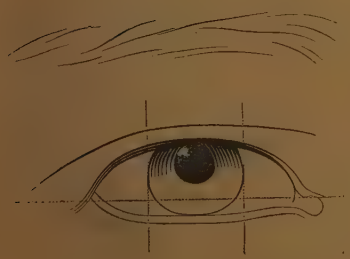
the most distinct and prominent markings; they will serve as a basis upon which to elaborate and express more minute detail and finish, as well as to make you familiar with the actual formation of the object of imitation, and induce a systematic habit of study as well as execution, which are both of much importance to beginners. With regard to expressing tints by lines, what has been before said (13 and 19) may be recalled to mind, and the pupil should not attempt to finish up a drawing, until he is in a measure perfect in each progressive step. In the following examples, is shown the method of proceeding gradually with a drawing, and it is advisable that this, as well as each progressive example, should be practised over and over again, until not only facility in its imitation is attained, but the method by which that imitation is produced is thoroughly understood.

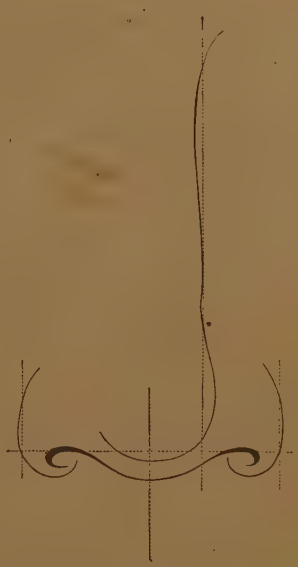


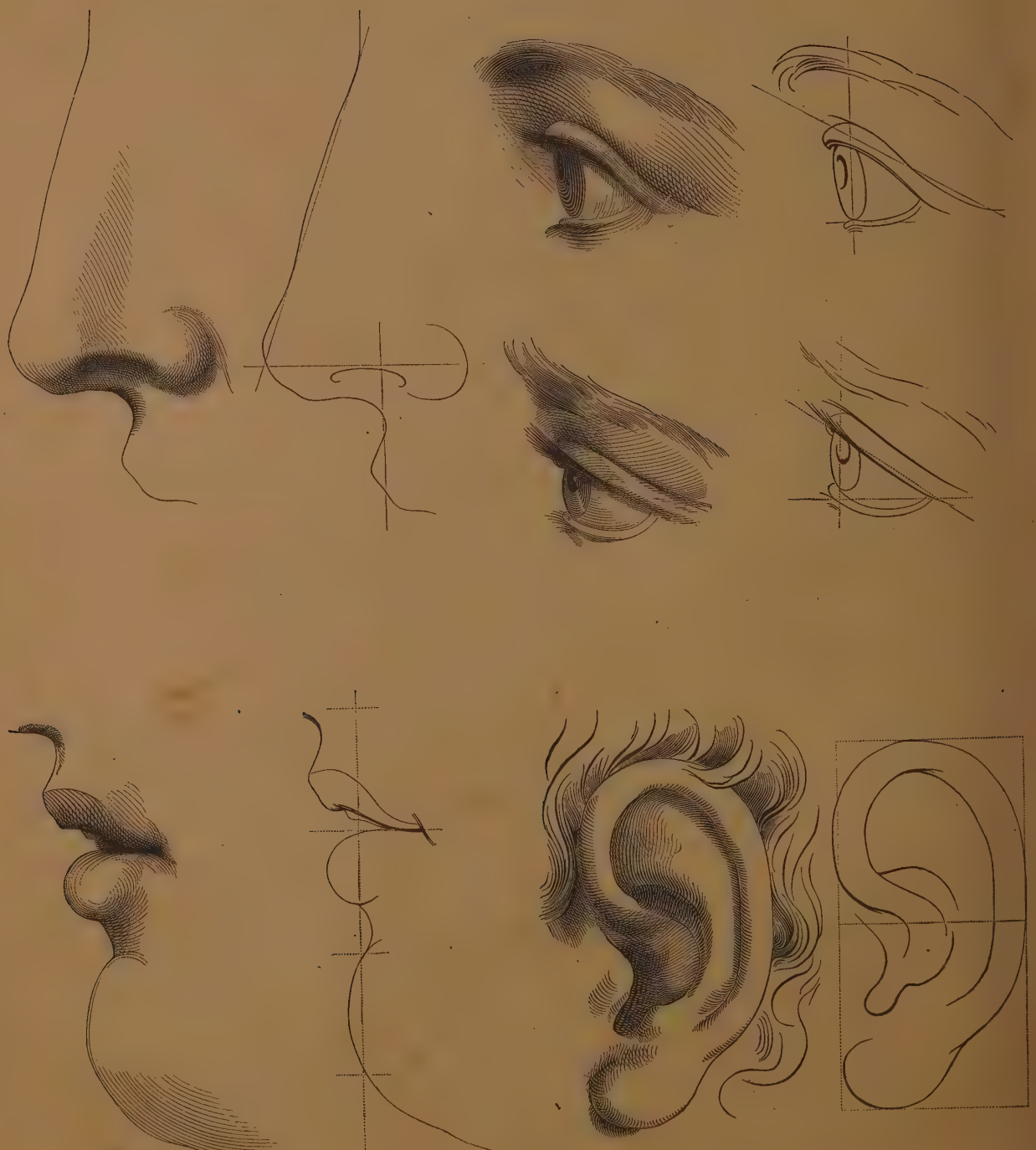
54. The directions with regard to this example have been thus fully given, and their importance especially urged, because of their application to those that follow, subject only to such variations as the peculiar form of the different features may require in their delineation. Difficulty may be felt, in the first attempts, in expressing the shadows, as well as in obtaining a correct outline, as the delicacy of hand and precision of touch requisite to their expression, are only to be acquired by care and practice. To become a good draughtsman this difficulty must be mastered, and it must be done now—in the beginning—when it is less formidable. Should the pupil in his anxiety to go forward, find it irksome to devote the time and patience to these rudimental studies that may be required, he may rely upon it, he will soon find himself involved in greater difficulties, from which it may not be easy for him to extricate himself. This injudicious hurrying forward has done much harm to education in design, by bringing disgust rather than delight in its pursuit. Never leave a difficulty behind you that you have not overcome, and those that lie before

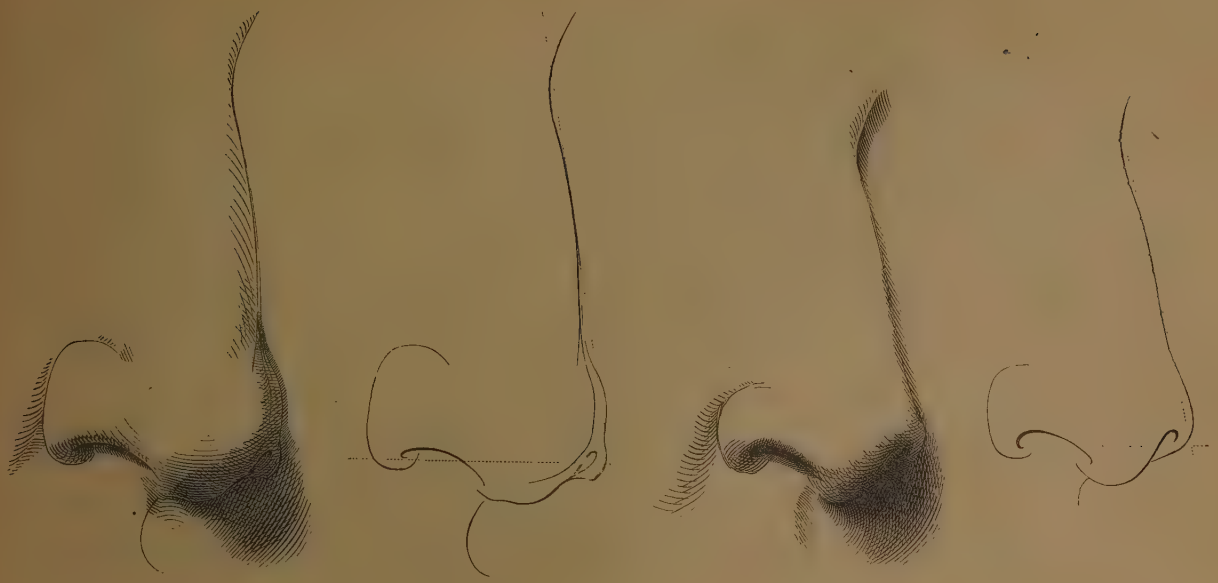
will be no longer formidable. Presuming the pupil to be in earnest in the business, and anxious that he should early learn to rely somewhat upon his own judgment as well as intelligence, let us place before him the following examples in delineating the features, which he should carefully study and learn to draw, with some degree of facility, before he attempts to combine them together in the perfect head. To the principles of Design, of Form, of Grace, and Beauty, developed by the human figure, and especially the head and face, frequent reference will be made hereafter; and unless proper care has been bestowed upon the study as well as practice of these examples, the learner will find his progress continually impeded for want of that elementary strength and progressive knowledge necessary to secure success in more advanced studies. The straight lines, given to assist in drawing the outlines, may be drawn with a lead pencil (43), which, after the outline is secured by the pen, may be erased with Indian rubber. Again, let it be impressed upon the pupil, that the sooner he learns to do without these straight lines, drawn on the paper, the better, but their application and use should never be overlooked or forgotten.

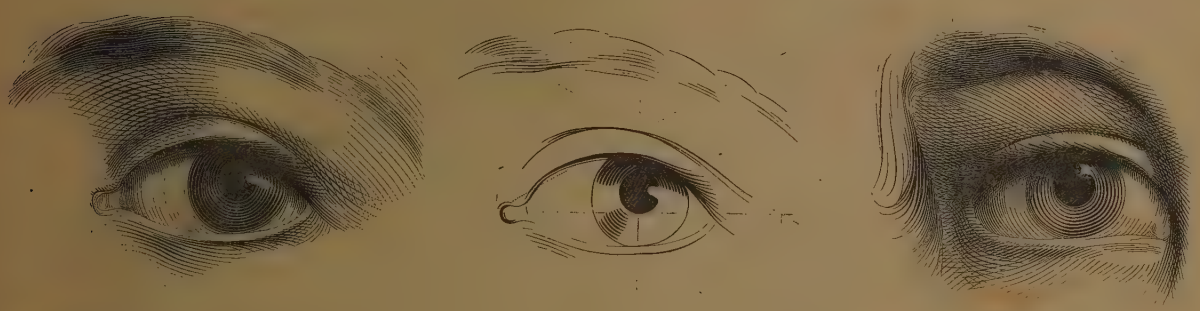


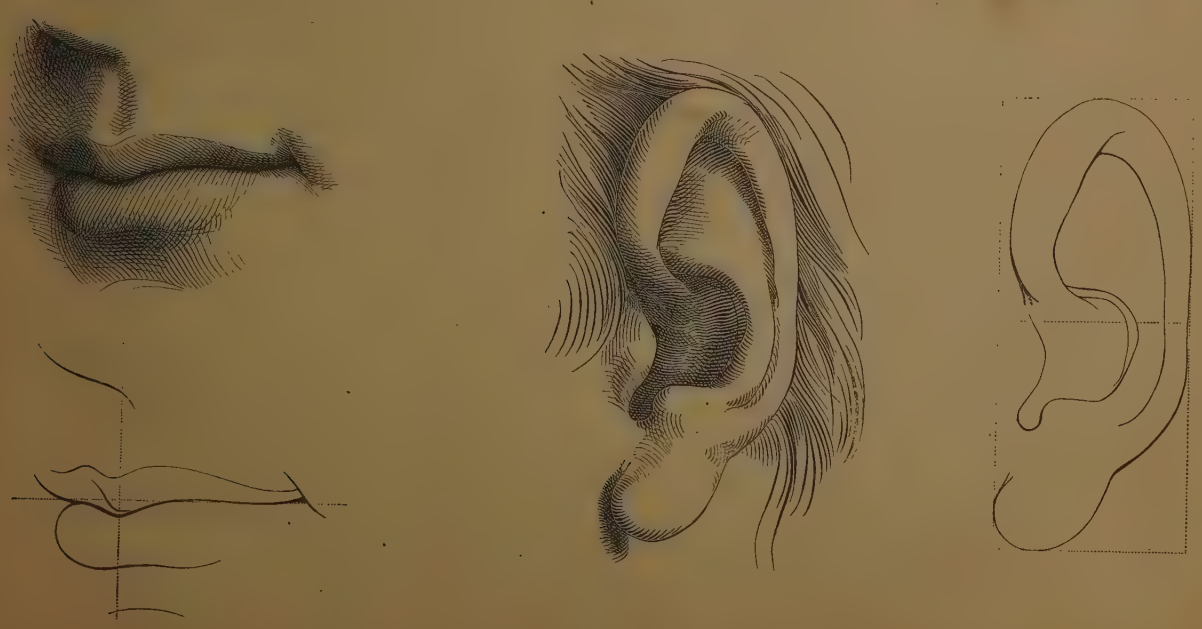










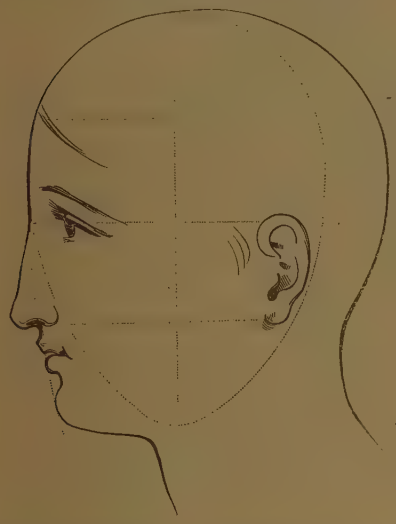


55. To enter into the minute detail of the proportions of the head and features, according to the most received standards, would be of little benefit to the student until he is farther advanced. A few leading principles will be sufficient for his present purposes. Nature, although confined by no mathematical precision, and producing the infinite variety of countenance, character, and expression, by enlarging and diminishing as well as varying the form of the features, has supplied, in her most perfect productions, a standard of proportion useful to the draughtsman, not only as assisting in the delineation of correct and beautiful forms, but also in such as are exceptions. A standard of form once impressed on the mind, we soon learn to measure all deviations by it, as we learn to measure the variations of curved or eccentric by straight lines (20, 21). Thus may the eye be educated not only to fix upon the most prominent and characteristic peculiarities of a head, at once, but the impression will be so vividly preserved upon the memory that it may be recalled and delineated at any moment, with a degree of facility as surprising to the uninitiated as serviceable to the possessor. Nor is this principle of design alone applicable to drawing the head. It extends, as a general and practical method, to the delineation and preservation in the memory of all other objects, besides assisting in the cultivation of taste and that keen perception of the beautiful, which not only open to the follower and lover of art such inexhaustible resources of enjoyment, but have a purifying influence in the direction of his efforts to high and noble purposes. As we measure the degree of deformity by beauty, so a high standard of beauty has been attained by avoiding deformity. Thus the great artists of antiquity produced those exquisite and beautiful forms which perhaps were never found combined in any one living individual, and yet these forms were ideal only in their combination. Without the closest study and the keenest perception of the beautiful in nature, only to be acquired by that study, they never could have been produced.

56. To DRAW THE HEAD IN PROFILE, the first thing to be done is to fix upon some certain point or line to begin with, and one is most admirably provided by nature, of unerring certainty.

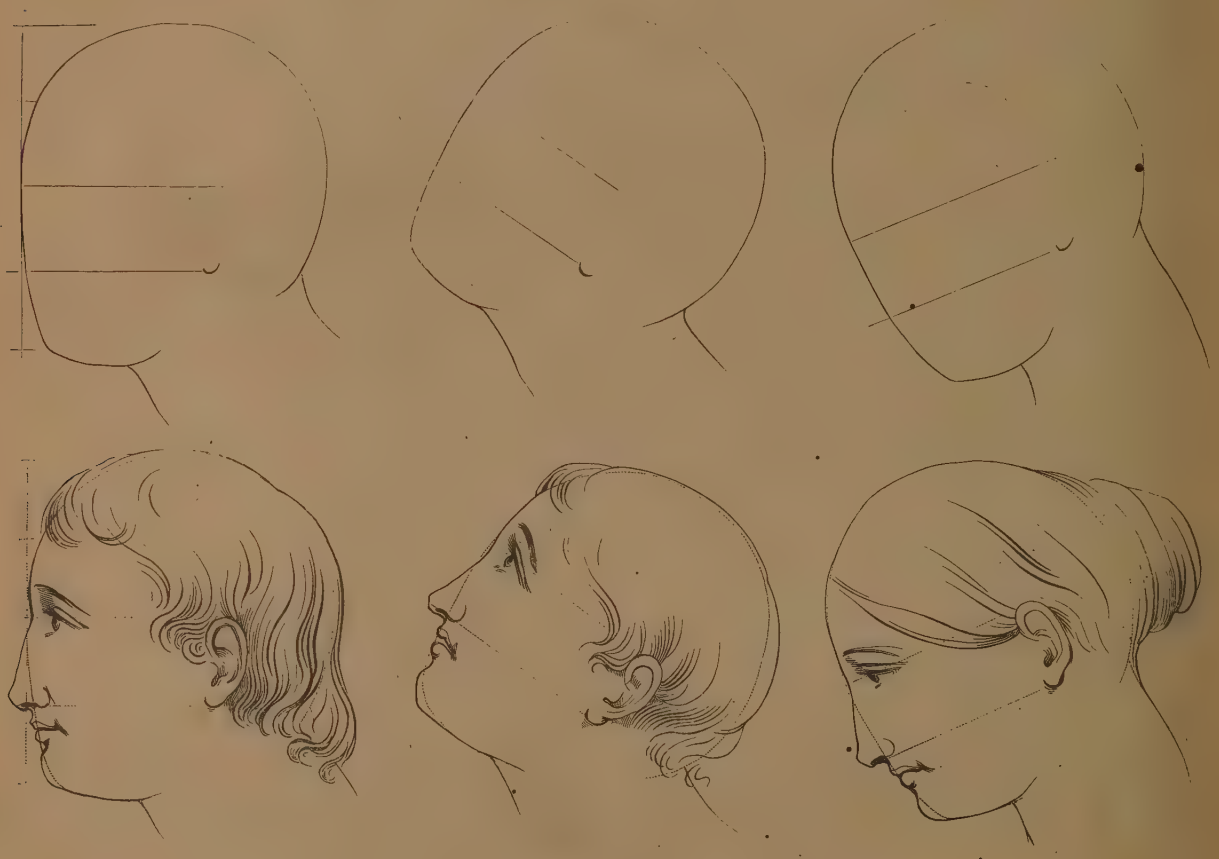
On looking at a head in an easy, erect position, the lower points of the nose and ear will be found to be on a level. A line connecting these points, therefore, gives a basis which must necessarily maintain its relations to all the parts and proportions of the head, above the lower extremity of the ear and nose. No matter what may be the position of the head, they must move with and accord with that line—the lower jaw alone possessing the power of independent motion and consequently affecting that portion of the face below it. Draw a line at right angles to this, and on it mark the length of the nose,

which is generally about one fourth the whole height of the head, and you have a standard or scale by which not only the proportions of the head may be ascertained, but those of the whole figure. The head is considered as containing in height four measures of the nose—and, that greater accuracy may be obtained, the nose is subdivided into twelve Parts, usually called *Minutes.* These minutes are seldom attended to in the delineation of nature, but are found serviceable in minute study of the antique statues, as will be hereafter shown. The received scale of measurement, therefore, for the figure stands thus—Twelve Minutes make one Part (or nose)—Four Parts one Head—etc. However these proportions may be found to vary in nature, some standard by which we may be enabled to define the degree of such variations has been found of much practical importance.



57. The oval has been often recommended as the best given form upon which to delineate the head, and when seen in a full, front view (64), it will be found to serve most admirably, but in the profile it is in a measure of little value. The pupil should early train his eye to the observation of the general forms of objects, and the sooner he begins the better. When that general form assimilates to a well-known and recognised shape, as for instance, the circle, the oval, the square, or the triangle, it is well enough to make use of them, but it will be seen at once by the above outline, how little the oval can assist in drawing the profile. It limits nothing, defines nothing. It gives no fixed point or proportion, nor does it present the slightest general idea of the head. Equally inefficient is the application of the equilateral triangle and the square; and after all, if the learner can not be taught to do without such mechanical aid in drawing, even in his early attempts, he will never attain proficiency in the art. They are necessary more as correctives, as the means by which he may, with the exercise of proper judgment, supply the want of a teacher, to tell him when he is doing wrong, and direct him in correcting his mistakes, maturing his judgment gradually for higher efforts, and clearing from his way all mystery in the pursuit of knowledge in design. It is not to be understood that the various methods and principles that have been long inculcated, in many cases by high authority, should be disregarded; they may be all good and serviceable to a certain extent, but they often tend to confuse rather than assist the learner in his first efforts. He becomes alarmed at the difficulties in which he is involved, finds the pursuit one of toil rather than pleasure, and gives it up in despair.

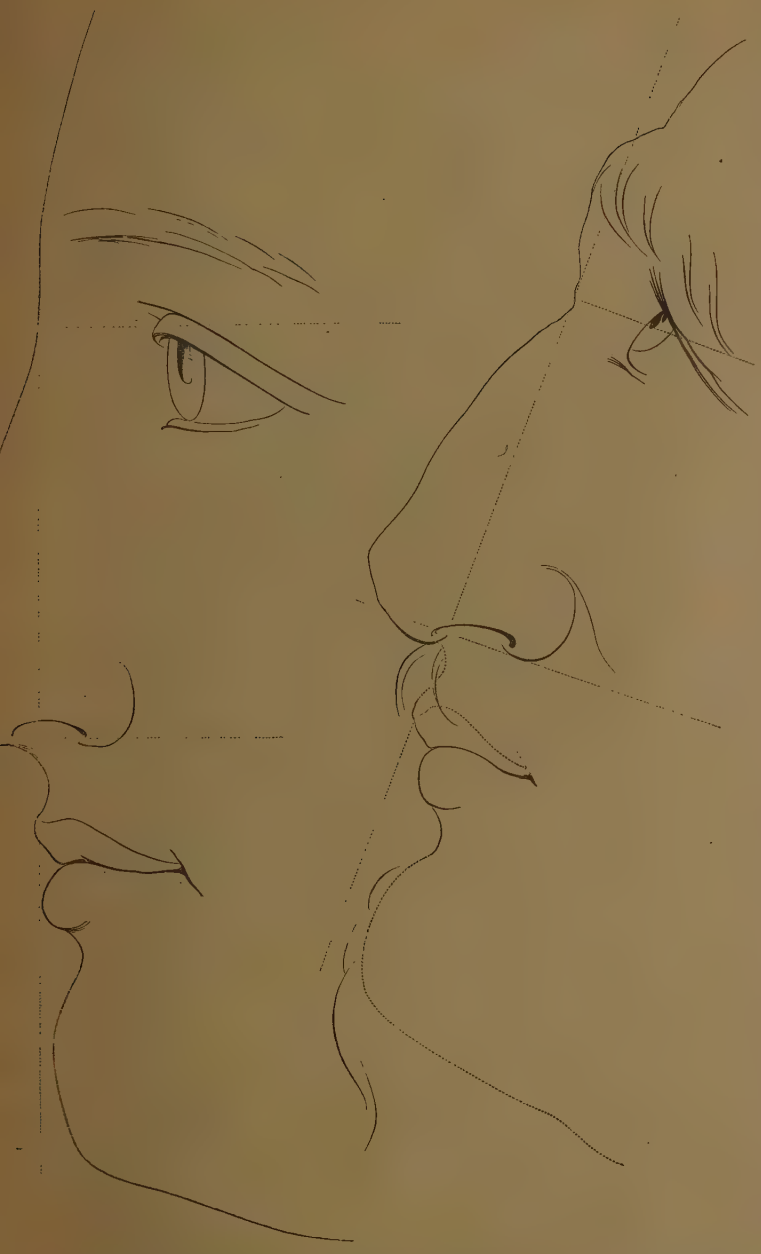
58. With the line designating the position of the ear and nostril, a general outline of the head and the general proportions marked out, but little more remains than to express by well-defined and decided touches the characteristic features and more minute details.



59. It would seem in place and proper before proceeding farther, to enter into an explanation of the anatomical formation of the head, especially of the bones, and it is almost impossible to proceed far in the delineation of the human figure, without reverting to the wonderful machinery that gives it life and action. But, it is not well, at this stage of the pupil's progress, to enter upon a study that he will pursue with more earnestness and greater profit hereafter, when he has advanced far enough to be more sensible of its absolute necessity. He has now to learn, not only the rudimental principles of design, but to acquire a facility in the use of the pen or pencil that can only be obtained by practice, and an increased and increasing love for the art, which will bear him onward successfully, and sustain him through any difficulty that he may encounter.

60. Many have been deterred from learning to draw, by the formidable array of studies that have been unnecessarily placed before them; these should never be in advance, but always, as far as possible, progressive with a certain degree of capacity both of eye and hand. The judgment and power of execution being thus matured together, their growth is healthful and gives certain assurance of success. Let the pupil, therefore, try his hand in drawing the above profiles or any others more suited to his taste, to which he may have access. Let him practically apply the principles laid down, and if he does not succeed in producing a fair copy, he may rely upon it he has gone too fast, and before proceeding farther should retrace the ground he has passed over. A more finished example in drawing the profile, and on a larger scale, may be now attempted.

61. Let it be remembered that a drawing, incorrect in outline and the just proportions of the parts, can never be said to be finished, however great the labor bestowed upon the elaboration of its details. Care should be taken, therefore, that these important points are well determined first: and thus much lost time and many disappointments will be avoided. First obtain a general idea of the object which you desire to draw. Then arrange its proportions into an harmonious outline—Study it

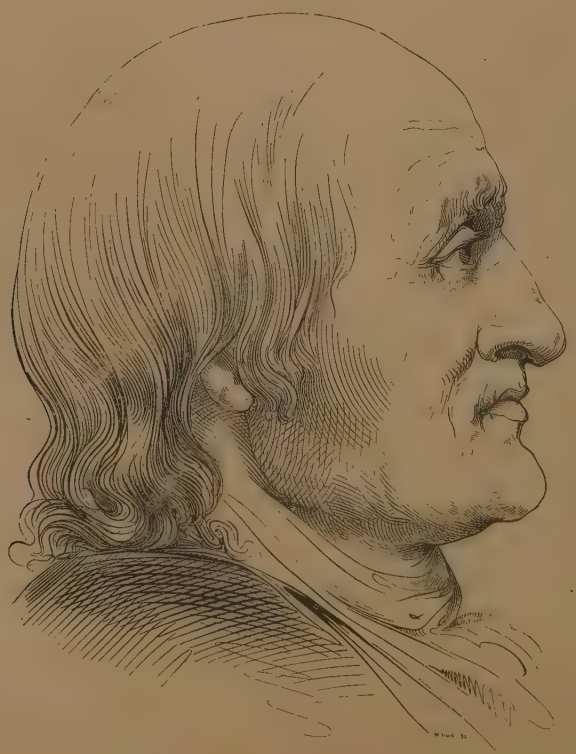


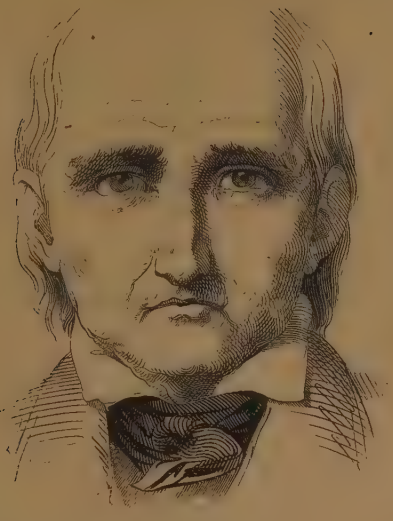
well;—see that all the prevailing lines correspond to the form, character, and action of the original. That done, you have a sure groundwork upon which you may proceed with safety, and all the labor bestowed upon it afterward will be to the purpose. This principle will be found of general application in design, from the minutest object to the most extensive composition; and yet we must possess knowledge of the details to form just ideas of the whole. You can not begin by drawing a foot and erect on it a perfect figure, although without the capacity to draw and finish that foot, you can not form a just idea of its true position and relation to the whole figure. First make yourself proficient in details and particulars—then learn to connect these particulars into an harmonious whole, to understand the power and propriety of their combinations, and you are prepared to generalize, and to descend from generals to particulars, in the execution of your drawings, pictures, models, or designs.

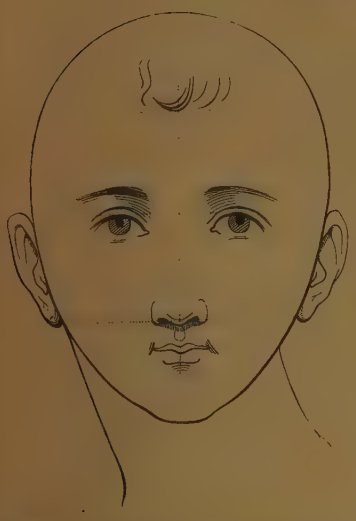
62. In drawing the outline of the second profile, it should be remembered, that the parts of the face covered by the beard, should be slightly indicated or at least defined, or you can never with accuracy express those that do appear and preserve all the proportions, action, and harmony of the parts. The importance of the application of this method will be more forcibly shown hereafter. In this instance it may seem of trivial importance—but still it is of importance and

should not escape the observation and attention of the learner. He should look not only to the appearance of objects, but also to their actual form. It is thus, and thus only, that he will acquire the eye and hand of a master in the art, and avoid that feebleness and indecision which mark the touch of the uneducated; who may labor and elaborate as they will, yet never reach the truth and expression that seem but the momentary, spontaneous, impulse of his mind and hand. This should be the high aim of the follower of art, and should he grow weary over the means required in its attainment, let him be encouraged to persevere, in the certainty of success that awaits his exertions. Above all things, let him not attempt too much until he acquires strength. His steps should be slow and sure. The desire of advancement is wholesome in art, as in all other pursuits and studies, but should be restrained within proper limits. Let it be cherished and kept alive as an incentive to that preparation requisite for high achievements. Success in humble efforts gives strength for higher, while continued failures tend to break down and crush the spirit.

63. It may be found more difficult for a beginner to draw in large than small, yet, if the limits of this work would allow, all the examples given would be better if they were of the full size of nature. The profiles which have just been presented to the pupil, demand the exertion of his utmost capacity, and they should be drawn, not only as they are, but also reversed, which is recommended as the proper course of practice with all the examples that have been, or may be given hereafter.

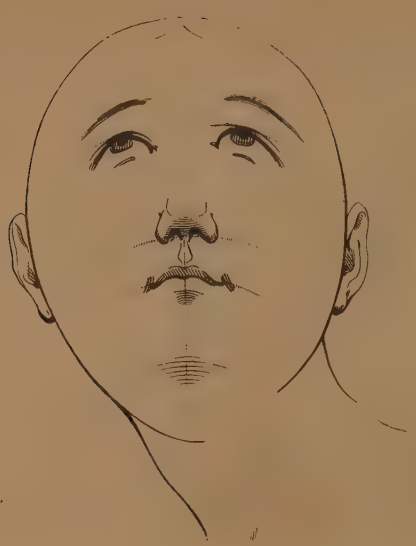


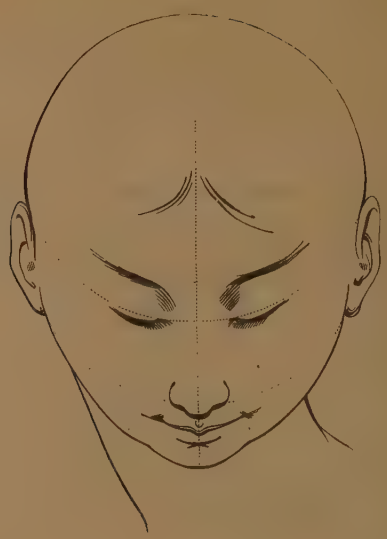




64. However inappropriate the oval may be in drawing a profile, its application in a full or front view will appear by a moment's observation. It strikes at once the prevailing or general outline, whether it be that of a youthful or aged individual. It should be understood that the regular and mathematical ellipse, generally called an oval, is not here meant, but the true oval or egg-like form—one familiar to all, and easily remembered. The same governing lines and general proportions, that are applicable to the profile, apply also to the full or front view of the head and face; and according to the degree of diversion of the lines and proportions in the original from these, can we determine their true position and delineate them. It is easy to decide, in assuming the form of an egg to represent the general outline of the head, whether that form be more or less obtuse or elongated, according to the peculiarity of the original we desire to represent, as well as the proportions occupied by the individual features; and the degree of variation once decided with regard to the original object, the pupil has gone over the instructions already given to very little profit, if he can not express them in his drawing with readiness.

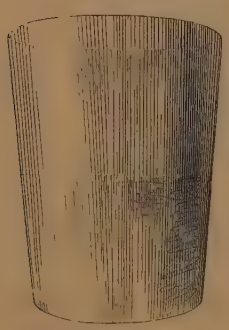
65. The moment the head is thrown backward or forward, and the lower extremity of the nose is thereby thrown above or below the lower extremities of the ears, the base or governing line, drawn





through these points ceases, necessarily, to be a straight line, and according to the degree of elevation or depression of the head, is its degree of variation and curvature. It is still, however, the governing line for the true position of the features, which must harmonize and agree with it upon the principles already inculcated with reference to drawing the profile.

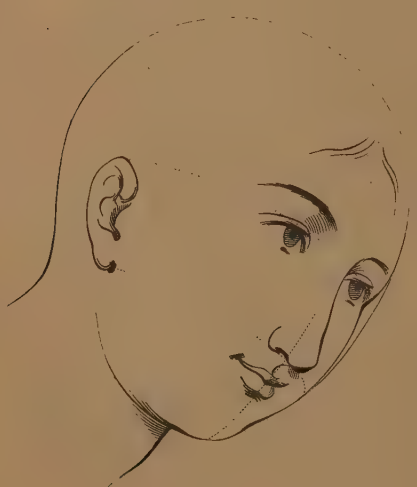
66. Until the pupil has acquired some knowledge of perspective, he can not be made thoroughly to comprehend the delicate variations of these lines in their relation to one another, and although it more properly belongs to that study, a simple principle may be here introduced to his notice. Take an ordinary glass or tumbler, half full of water; hold it up before you, until the line of the water is on a level with the eye—it presents then a straight line. Observe the lines of the brim and bottom of the tumbler—they are both curved. Then bring the brim on a level with the eye—it is a straight line—while that of the water presents a curve and that of the bottom a still greater. The farther the glass is removed from the eye, the more these curves diminish or approach straight lines—until at the distance of six or eight feet, their curvature is scarcely perceptible—Still the actual lines of the brim, the water, and the base, are in fact parallel to each other, although the tumbler can be placed at no distance or in no possible position in



which they will so appear to the eye, or in which it would be allowable so to represent them. All this does not affect the principles which it is now the object to inculcate. Hereafter these nice distinctions will be better understood by the pupil, as he will soon, if he does not already, feel the impossibility of advancing far in the study of Design without a knowledge of perspective, which must shortly occupy his attention.

67. In a three-quarters view of the face and head, the oval is often made use of, but with much less advantage than in a full, front view A desire to fix upon some one form by which the outline of the head may be generalized, has led to the adoption of the oval, and if it were absolutely necessary that one arbitrary form alone should be used, a better could not be devised.

It should be applied, however, with judgment, or it may lead to error and prove a deceitful guide. When drawn on a flat surface, the moment the view of the head inclines to the right or left, the centre or perpendicular ceases to be a straight line, and increasing in curvature, loses its true position as a middle or central line for the features, while the oval itself is gradually lost in regard to the true outline of the head, until the movement reaches a profile, and it becomes in a measure useless. Were we to follow this central line in its movement, under such circumstances, and assume it as indicating the middle point of the features, distortion would inevitably be the result. The draughtsman should look to something more accurate and unerring. Even in the next outline, although the head is, as it were, forced into the oval, and the curve indicating the middle point of the forehead and mouth adapted to it, the whole seems rather an affectation of method than a practical application.



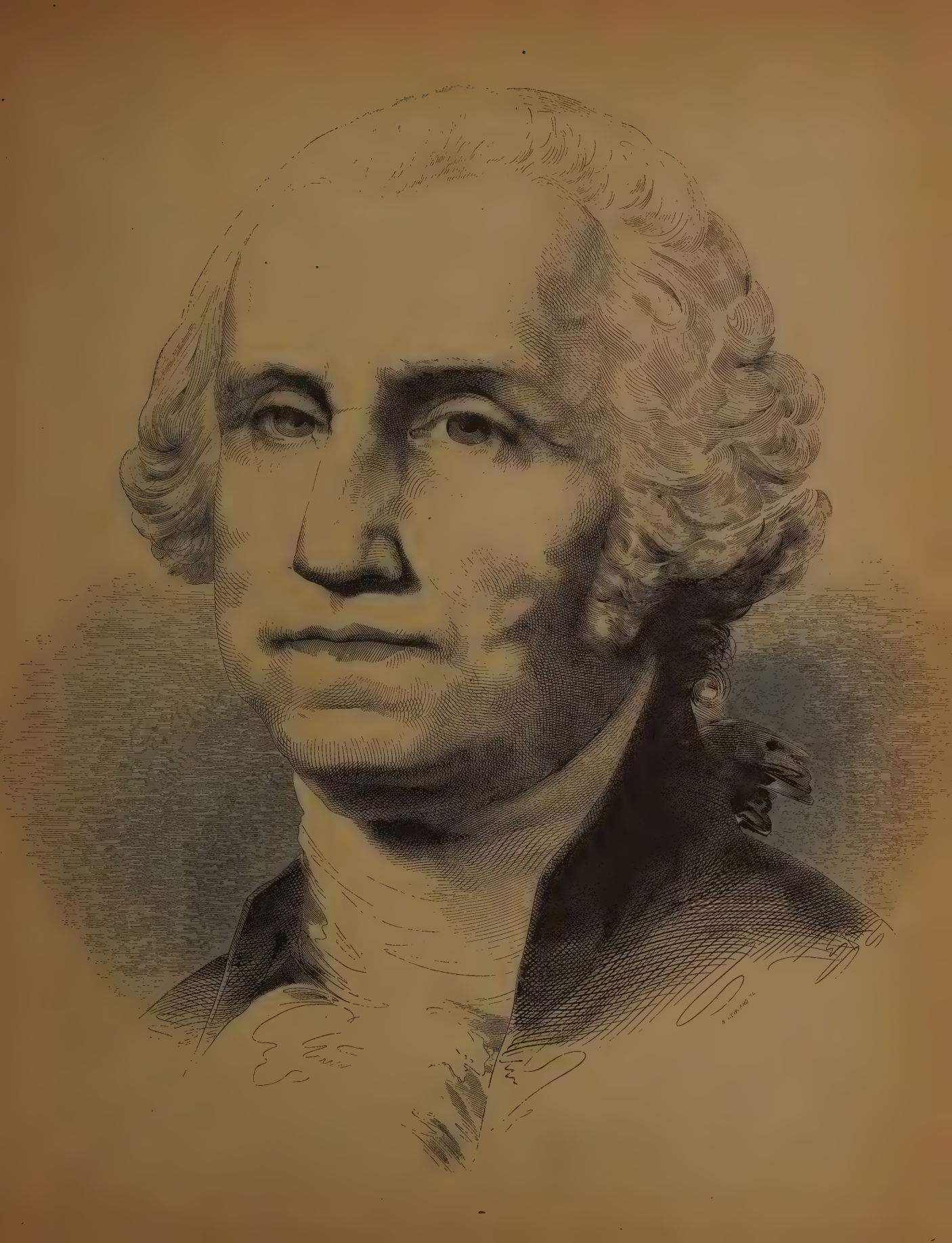
68. The imaginary central line of the face and head, is of as much importance as any real line presented to the eye, and should be as carefully studied and defined. It will be found not only serviceable in assisting to determine the proper position and balance of the features, when drawing from a picture, print, cast, or other still representation of the living head, but highly important in drawing from nature, especially when we have children or restless subjects for models. The great difficulty and annoyance, so often experienced by artists in this respect, might be avoided, in a great degree, if this central line were more carefully studied. It directs at once to the general character of the head, without which no perfec-

tion of individual parts will ever produce resemblance. It is by a general impression that we know and recognise acquaintances, and see resemblances even at a distance. This,—not the abstracted detail of parts, the precise line of a lip, or the tint of an eye,—is fixed upon the mind and governs its conclusions. It must not be understood that these peculiarities should be neglected, but that they should not be suffered to engross the attention of the draughtsman, to the neglect of more important principles—more important, because without proper attention to them, the labor bestowed upon detail will be to little profit. As evidence how much more strongly general impressions of form are retained upon the memory than minute peculiarities, how often do we hear disagreement between persons as to certain peculiarities in those with whom they are in the habit of daily intercourse. One will contend, for instance, that an eye is black, another will insist that it is hazel, a third that it is blue, and when the matter is settled by the presence of the individual, it is found they were all wrong, and yet neither party would fail to recognise their friend as far as they could see him.

69. As a profitable exercise for the study and understanding of this principle of design, as well as of all those urged upon the attention of the pupil in this chapter, let him take a good plaster cast of a head, and on it draw a central line, from the parting of the hair to the extremity of the chin; let him also draw a line touching the lower extremities of the ears and nose, others parallel to it passing through the eyelids, eyebrows, and mouth, and lines from the inner corners of the eyes to the mouth, parallel with the central line. These governing lines defining the positions and proportions of the features will then appear, in a three-quarters view, similar to those indicated in the annexed outline, and there is no better practice for a beginner than to draw from a plaster cast thus marked. He should place it in every possible position, and draw it carefully; making use of these lines as guides by which to define not only the true position and form of the features, but to accustom his eye to the close observation and understanding of the principles that must govern him in the delineation of the head. After some practice in drawing and familiarity with a cast, thus marked, he may make a trial on one without the lines. Drawing from casts is an important exercise, as casts afford greater facility for careful study and observation than

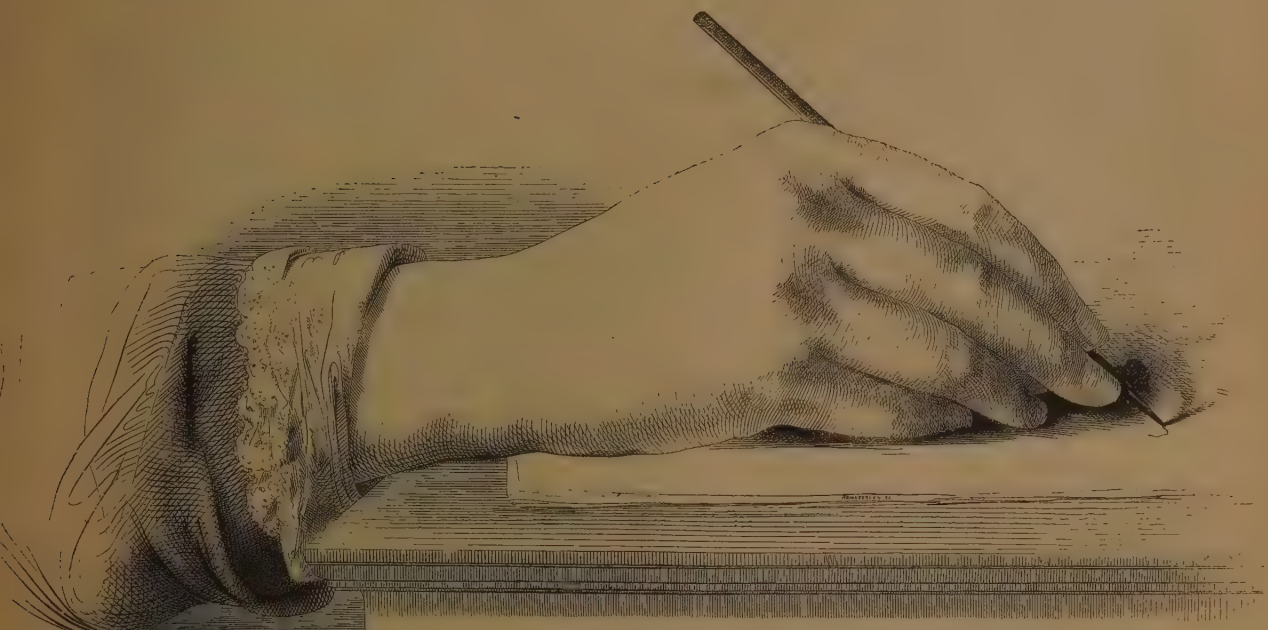
living models, who are constantly changing their positions, and thus embarrassing the unpractised draughtsman. In schools and classes, it is recommended that a small collection of good specimens, not only of heads, but of hands, feet, limbs, etc., should be made, for the use of pupils. Those who pursue the art by themselves, should at least have one or more good copies from the antique, which can be readily procured, and at a very cheap rate, in any of our cities. In drawing from them, they should always be placed or remain in the same light during the progress of a drawing. Whether the subject of imitation be a cast or living head, the same principles and method will be found applicable; as the former presents less difficulty, it is the better to begin with. Before a touch or line is made, you should study well the original before you, and define its position and movement; make yourself familiar with its character and peculiarities, balance all its proportions, and carefully adjust the relation of the parts to one another; and, as all important with the rest, do not lose sight of the value of a correct central point for the features, for it is your surest reliance. Once obtained, it affords a key to the truthful delineation of the head and features, and with proper care and attention secures the utmost certainty in preserving the harmonious agreement of the parts. Many sketches and drawings, by those who have been most distinguished as masters in the art, might be referred to, to show their familiar use and application of this method, which with a little practice and observation, will be soon understood and appreciated by the pupil.

70. It should be understood that the study and practice of pupils should not be confined to the examples given in this work. There are many admirable specimens well worthy of their study and imitation, which may be readily obtained, and all that has been thus far said, has been to little purpose, if they are not already capable of exercising proper judgment in selection. One thing can not be too strongly impressed upon them: It is more important to acquire a knowledge of the principles of art, than a mere facility in the imitation of the *manner* of another. Many falsely imagine when they can "make a drawing to look like an engraving" to the uneducated eye of partial friends, they are doing great things in the way of art, but it is a sad mistake. Let them learn the first, great principles of design, and then that best of all Drawing-Books, the ***Book of Nature***, is open and intelligible to them, its pages full of beauty and endless as the enjoyment and profit they afford.



CHAPTER III.

RUDIMENTS OF DRAWING.—THE HUMAN FIGURE.



"Practice, though essential to perfection, can never attain that to which it aims, unless it works under the direction of principle."—Sir Joshua Reynolds.

WITH some the method of learning to draw, thus far developed, may have proved long and even tedious; while to others it may have been too rapid, and their advancement, in its practical application, may not have equalled their expectations or wishes. The former should not be disheartened because their hand and conception have not kept pace with their teaching, nor the latter deceive themselves by hurrying forward too rapidly,—or fail to understand, thoroughly, and to apply practically, every principle laid down. The purpose of the American Drawing-Book is not to teach the methods of drawing trees, houses, faces, figures, or flowers, by separate recipe, nor to direct the learner by short-cuts to the attainment of proficiency in any one branch singly; but, to place before him the broad principles of Design, a knowledge of which, with the power of its practical application, will qualify for the exercise of all, or any one branch, that the taste or inclination of the possessor may lead him to pursue; and the course of study

advised is sincerely believed to be the surest and most direct to the attainment of that object. It is no experiment, but one that has been well tested and proved, claiming no novelty, beyond its adaptation to the wants and purposes of our time and country, divesting the art of all mystery, and placing it within the reach and comprehension of every one.

72. Some who have, perhaps, filled their minds with high aspirations, may look with disdain upon the simple beginning placed before them, "as matters for children," and turn over leaf by leaf in search of something to strike their fancy, and yet, they may not be able to draw two straight lines, nor two crooked ones either, to a given purpose, with the accuracy of many an urchin on the school-bench, who has only started when they considered themselves already far on the way. Let such reflect seriously upon this self-deception, and let them be assured, that the higher their aspirations, the more they will require the aid of such elementary knowledge to realize them. It is a short task, that will well repay the labor bestowed, even to those most richly endowed with the gift of genius; for by such aid will they most surely develop that genius, and reach the goal of their highest ambition.

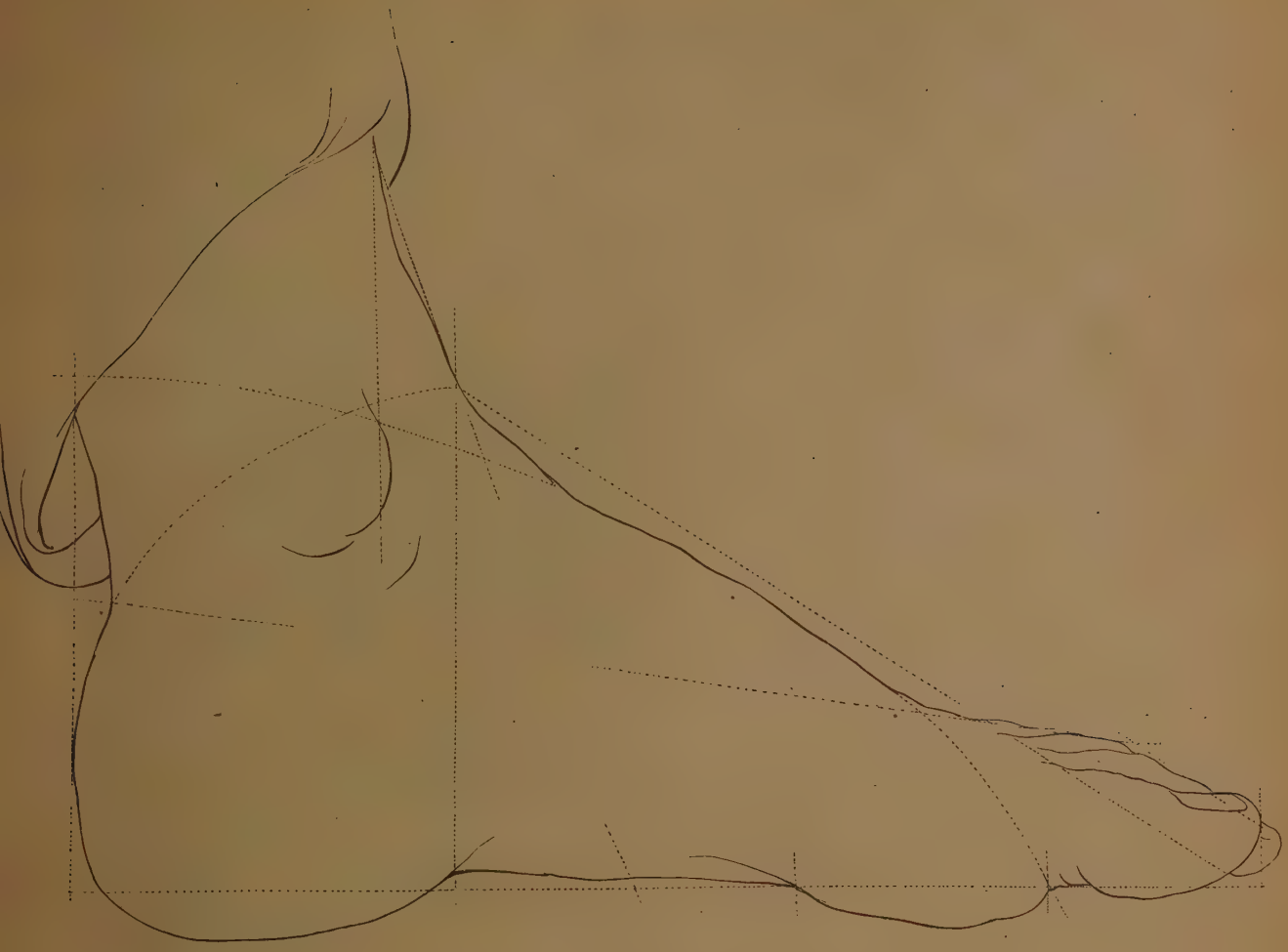
73. Before entering upon the study of the whole figure, some degree of attention should be bestowed upon the delineation of the hand and foot; both of which present difficulties to the beginner, and from these very difficulties, are well calculated to strengthen that general capacity which should be his aim, and which is an essential qualification in a draughtsman; more irregular and less balanced in their parts and proportions than the head, the pupil is compelled to rely more upon his eye and judgment in ascertaining the modulations of their form and outline, the proportions of the parts, and their relation to one another. But, if he has carefully studied and practised one of the first and most simple examples placed before him (32), he possesses the understanding of a principle from which he will derive much assistance. If he has not hurried forward too rapidly, and has bestowed proper attention upon what has been already urged, in reference to the delineation of the individual features of the head, he will soon find the difficulties encountered, in his first attempts in drawing the hand or foot, gradually lessened, as he becomes familiar with the application to them, as to every other object, of one of the first and leading principles of design (21). If he is not already, he will soon be convinced that the time and study this knowledge has cost him have been well bestowed, and that he has done better, and advanced more surely, than if he had filled his port-folio with what might seem higher attempts; but, from which he would have derived but little permanent advantage.

74. The ambition to have "something to show" is apt to mislead from a proper and systematic course. Much of this evil may be attributed to the misguided anxiety of parents and friends, as well as teachers, who often allow their judgment to be overcome, either to indulge the whim of a parent or pupil, or to gain a reputation as rapid instructors. They even here deceive themselves by taking the very longest course they could adopt. Such teachers do far more to impede than forward the cause of education in design. Even if rapid advancement be the object, a few hours devoted to the elucidation, to the understanding of the pupil, of the first principles of drawing, will advance him more certainly, and rapidly, than weeks and months wasted in groping a devious way through ill-drawn fancy castles, distorted heads and figures, trees and bridges, and the endless variety of "easy lessons" which are too often placed before him — the great secret of their being "easy to do" often consisting in their being so decidedly bad that he can hardly make anything worse.

75. It should not be understood that the pupil, during the prosecution of the study of Drawing, should be excluded from the privilege of attempting to draw anything that strikes his fancy or excites his admiration, more than we would deny the privilege of speech to a child while he is learning his grammar. Let him try the road-side cottage, the rustic bridge, the house-dog, or any other object with which he is familiar, either in nature, drawings, or prints, and always let him do the best he can. The very difficulties he will encounter, the wants he will be made to feel, will have a strong and happy tendency to give additional impulse to his studies, besides the cultivation and development of that love for art which might otherwise be blighted by too rigid application to its study. It is in this *study* that his efforts should be prescribed to a systematic course of education, that will ultimately lead to the possession of that happy faculty which will overcome all difficulties, and enable him to draw, with equal ease and facility, any object in nature, or of the mind's creation.

76. The Foot is by no means so facile in its movements as the hand, nor capable of such great variety of attitude and action; hence it is easier to draw, and, therefore, more properly, should be placed first before the pupil. He will now have occasion for the exercise and practical application of the principles laid down in the primary instructions he has received; and should he find the difficulties he encounters try him beyond his strength, he can not do better, before he proceeds farther, than to make a careful revision of the ground he may have passed over too hurriedly, or without bestowing sufficient study and practice upon these primary exercises.

77. However admirable and perfect may be the antique statues in their proportions and details, and however desirable it may be to place before the pupil the choicest models for the exercise of his skill, it is enough for his present purposes to look to the familiar objects which are within his reach. A boy's foot can be found without seeking it in an academy; and, if it has not been already distorted by the shoemaker, affords a model well worth his study and best effort. First, let him try the example here placed before him, and then, doubtless, he may find a young friend not unwilling to submit to serve as his model; and, if he has done all that has been required of him, and carefully exercises himself in these few examples, he will possess the capacity of drawing a foot, and presently a hand, from nature, with ease and accuracy;—and more: if he can draw a Head, a Hand, and a Foot, he can draw the Figure, or any other

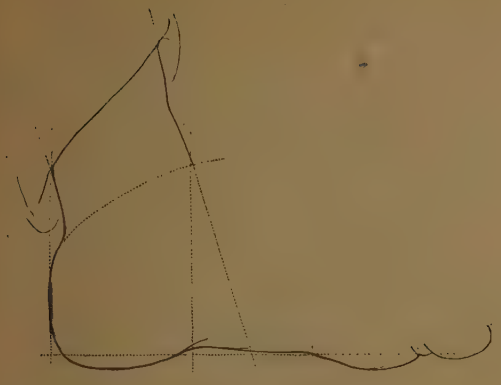


familiar object; not, perhaps, with the precision and touch of a master, but he can achieve enough to insure the possession of a safe and certain groundwork of useful practical knowledge and facility of Design.

78. The first thing to be done, in drawing the above example, is carefully to examine and study the original, and to ascertain its proportions, as nearly as you can, without measuring. Then cautiously set about its outline, which should be accurately, but delicately defined, before any attempt is made to express the shadows or tints, which are in comparison with it of secondary importance, especially at this stage of your progress. Be not in a hurry to make pictures; learn to draw correctly, and the pictures you make, by-and-by, will be all the better for it.

79. (I) Lest the principles, upon which the outline on the last page is produced, should not be sufficiently understood by the pupil, let us enter into a more concise explanation; and, for the sake of economizing space, by a reduction of it, which will answer all purposes. As he reads, he can refer to the larger outline. It should be borne in mind, that all the examples, and, indeed, everything else the learner attempts to draw, should be, as nearly as possible, the size of the original; thereby avoiding that confusion of lines, and indecision, almost inseparable from diminished drawings, and which, in spite of every precaution, are more or less characteristic of the efforts of all beginners. Self-deception, which is apt to result from the practice of drawing in small, should be carefully guarded against. The quality of prettiness, which, often, is no more than littleness in art, may disguise errors, which drawing in large develops; but it performs a faithless service—one highly prejudicial to the advancement of the student, and calculated to mislead: for the evidence of his errors is the safest guard against their recurrence.

(II.) It is of the first importance to secure certain starting points, as well as a scale of proportion for the parts. Having decided on the length, from the heel to the end of the great toe, next ascertain the direction of the outline defining the sole of the foot. Remark (or mark, in your first trials) the points of the principal indentations, or features; and, surely, if you can draw the profile of a face with any degree of accuracy, but little difficulty will be encountered in drawing the simple curved line before you. But simple and easy as it may be, it must be done with precision. Observe that the outline above the heel disappears at a point immediately perpendicular to the extremity of the heel—remark the peculiarity of the curve of that portion of the outline—connect it with that of the sole of the foot—do it cautiously and carefully, and, if correctly, you have not only certain starting points, but one half of your outline already done. Do not suffer yourself to be deceived, when you have only produced an outline to look *something like the original*; that is not enough: it should correspond to it *exactly*.



(III.) You will observe that the point where the instep unites with the leg is directly perpendicular to the termination of the outline of the heel, where it unites with that of the hollow of the foot. The direction of the outward line of the leg would, if continued, strike a point about the middle of that of the hollow of the foot. The intersection of these imaginary lines gives you this important point, which you can further verify, by extending the curve of the heel, upward, to their intersection. Assure yourself, by close observation, how far the lines in the original correspond with those before you; and then proceed with the completion of your outline, observing, throughout, the utmost caution, and endeavor to obviate the necessity of correction, by avoiding the occurrence of error.

(IV.) Ascertain the direction of the line of the instep by a straight line, as indicated, and then verify its sweep by a continuation of it at one or both extremities. This method of the imaginary extension of lines, when once made familiar, will be found of great assistance to the draughtsman; and it is more readily acquired than may be at first imagined. It serves not only the attainment of accuracy, and lessens his labor, but insures harmony of the parts and details with one another. It also tends to habituate the eye to the observation of the true character and forms of objects, divesting them, as it were, of those minor details, which often obtrude themselves, and lead the eye and hand astray from the first broad and general impression or conception — which is of primary importance, and should be carefully secured at once, and never lost sight of. Herein lies one of the great secrets of the ease and freedom in the expression of an idea, that give such a charm to the sketches of the experienced artist — by which he conveys his impressions in a few lines, apparently dashed off at random, but often far more to the purpose, and more expressive, than the more labored effort of the less gifted or less educated in art.

(v.) Having thus far progressed with your outline, but little more remains to be done, than to ascertain the direction of the lines by which you are to express the toes, and to complete the whole, in like manner, and upon the same principles, that have thus far guided you. Carefully examine it throughout, before you proceed to indicate the tints or shadows, which should be deferred until the utmost accuracy of outline is first attained; for, you may rest assured, that, by such a course, you will secure to yourself the capacity of expressing them with ease and freedom, by the surest means.

(vi.) Compare the parts and proportions of the original with your copy. Observe that the width or thickness across the ankle is about equal to that of the instep, and length of the heel, etc. Test the judgment of your eye first, and measure only to satisfy yourself of its accuracy. By such a course, you will soon have little requirement for rule or compass (23). By an imaginary continuation of the curvatures of your outline, study their movement, relation, and bearing, on each other. One single outline, thus studied and executed, will advance the pupil many a certain step, and render easy the few remaining examples that will be presented to him in the course of these elementary instructions.

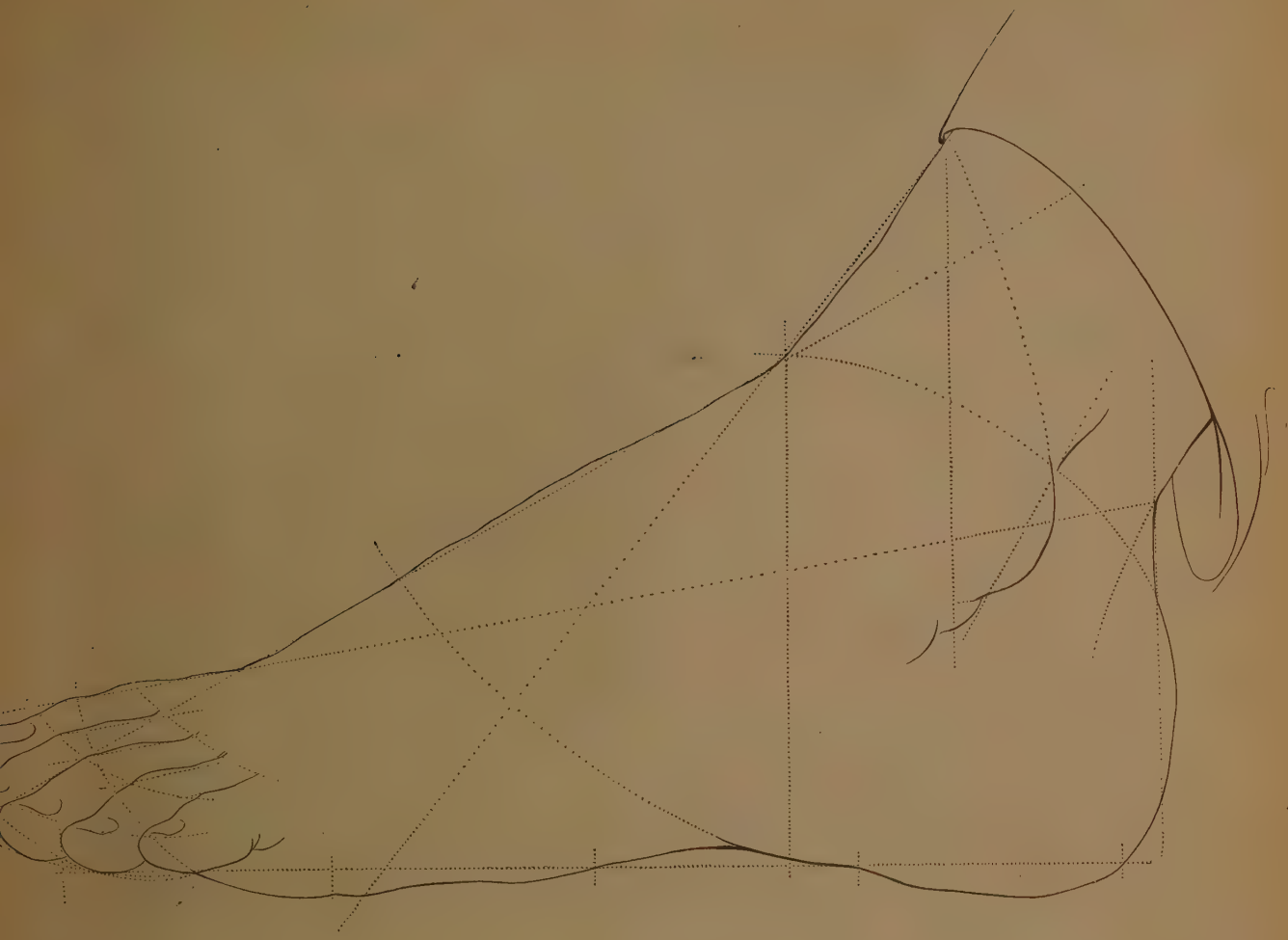
80. Presuming that the learner has not slighted what has been urged upon his attention, but that he has bestowed all the care, study, and practice, upon this example, that may be requisite; that he has, therefore, succeeded in producing, if not by one, by repeated efforts, a correct outline, he is fully prepared to encounter those that follow, with little other aid than his own strength and intelligence. If he has failed, let him be again reminded to retrace his steps. Let him depend upon it, he has lost or overlooked something, or perhaps many things, on the way, that he will need, even more hereafter than now, and without which, he will never become an accomplished draughtsman. Let him now, in good time, look to his deficiences, and seek their correction. It is a mistake to suppose that, to acquire a

knowledge and facility of drawing, quires must be consumed, a multiplicity of examples labored through, and portfolios filled. Although few examples may suffice for the elucidation of the first general principles of drawing, they should be dwelt upon and studied, until well and thoroughly understood; and the capacity of hand should be made, by practice, to keep pace with the understanding.

81. To know how a thing should be done, is not enough in art: we should know how to do it. One can no more learn to swim, without going into the water, than learn to draw without practice; while blind practice, unsupported by a degree of theoretical knowledge, is liable to mislead, almost as directly, from the right way. The knowledge of how a thing should be done, and the capacity to do it, will, if kept, as far as possible, in equal balance, secure certain results. They should keep pace together, mutually supporting and assisting in the attainment of the one great purpose. If one should gain advantage, either by reason of its own acquired strength, or weakness of the other, the weaker capacity should have time to regain its lost ground, which, in its turn, by that very effort, may get the start; but let them never lose sight of one another. Books and treatises on art, therefore, which are not based upon practical knowledge of its ways and means, have often a most mischievous tendency, and go far to the dissemination of false ideas, which should be cautiously received, especially by the student. It may be well enough for a writer, who possesses not the power of expressing one line of art, to indulge the exuberance of his fancy or caprice, by dashing forth his transcendent ideas with regard to it; but, they should only be received for what they are worth — and precious little will their worth be found, in most cases, to those whose business is production — the attainment of practical results. Not but that everything that can be said, in reference to art, is deserving the attention of its followers, yet the judgment should be prepared, in some degree, at least, before it can arrive at just conclusions, or be capable of exercising proper discrimination, in separating vague and impracticable theories from those that are well digested and useful. It is easy for the learned geographer to trace the route, to distant lands, over tempestuous seas; but he can no more navigate the bark to them, than the merchant who sends her forth. It is easy to say, and even feel, that a picture, a statue, or any other work of art, should be thus, or thus — should be perfection, that remote idea of perfection in itself imperfect, and founded, too often, on false or capricious notions; but, he who has no experience of the way to reach it, can never make it plain enough to others, to substitute his dreamy fancy of its direction, for long-established and well-tried landmarks, whose value to the student has been proved by the faithful guidance they have afforded to the great masters of art, who have reached its highest perfection, yet attained. Let us, therefore, judge of the mode of

culture by its fruit, nor discard the old, beaten, well-known path, until we can find a better — one, at least, that some traveller has pursued with success.

82. After what has been said, in relation to the method of drawing the outline of the previous example, it would be paying but a poor compliment to the intelligence of the pupil, to enter into a repetition of it, in reference to the above. It may be proper to remark, however, that the general principle, rather than any arbitrary process, of forming comparisons in relation to the parts, or of ascertaining and expressing the true direction of the lines, their movement, form, and connexion, most particularly require his attention, and should be the main object of his study and practice. The outline of the sole of the foot has been taken as a basis, or starting point, because



its direction and quantities were more easily defined; but it does not follow, that it should be taken thus in all instances, as there are many positions of the foot, in which it may be secondary, and more dependent on other leading points and lines. Proper judgment, therefore, should be exercised, in the selection of the line, or lines, most expressive of the general action and character of the object to be represented. This important beginning once made, farther details must naturally assume their just positions and connexion to the whole, as well as to one another—besides, serving in the process as correctives. If, for instance, the length of the foot should be too long, or too short, the moment the points indicating the true length of the heel and toes are decided upon, the length of the hollow of the foot, between the two, will be evidently too long or too short. A primary error is thus detected, by comparison with the other parts, in time for

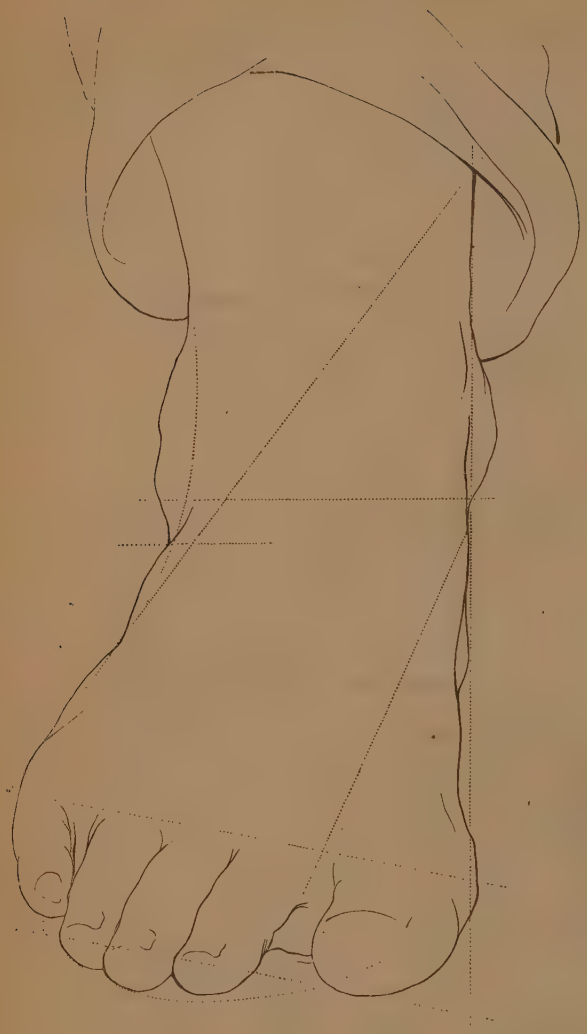
correction; and so on—the draughtsman is enabled, by balancing all the parts and proportions with one another, and studying their relations to the whole, to adjust and express his outline with an accuracy and certainty, that can never be acquired without some such systematic method of execution, which, if cultivated in time, will soon become a habit. This method presents, among many other advantages, one that will be found highly important, in reducing or enlarging an object; for, having once generalized the whole, according to the scale of reduction or enlargement desired, the just proportions of the parts, and minor details, are readily attained, and made to harmonize with the whole, in accordance with such scale of reduction or enlargement. By thus progressing, in the drawing of an outline, from generals to particulars, much greater ease, as well as certainty of accuracy, is the result, than by an opposite course; for, by beginning with details, and the lesser parts, we are apt to be led astray from the general and characteristic lines and quantities of the object of imitation.

83. Lest what has been previously said on this subject (61) should not be sufficiently understood, and appear contradictory to that which is now urged, it may be well to remark, that, while it is recommended to the pupil to make himself proficient, first, in the drawing of minor objects, it is not meant, thereby, that he should begin the drawing of a head, by drawing the features singly, before he generalizes the whole, and ascertains their true positions. In drawing the most simple object, there is a *general* character to be preserved, and particular component parts, or details, making up that whole: and all must perfectly harmonize together. The same principle applies to the delineation of a single mouth, an eye, a nose, a face, a head, a foot, a hand, a limb, a figure, a group, and a picture. Each should be considered in itself a whole, made up of subordinate parts, from the most simple detail, and line by which it is expressed, to the most elaborate work of art. Thus will the eye and hand become strengthened, by progressive study and practice, and the capacity advanced by degrees, almost imperceptibly, under the safe guidance of the one, like, universal principle.

84. The first conception, and consequently the first impression, to the mind of the artist, of his picture, is of its general character; and it is produced by gradually descending, in its execution, to the parts and details—each in their turn of subordinate and relative importance. This must also be its first impression on the mind of the beholder: he, too, is led to descend, in its contemplation, from generals to particulars. The rules of production and just appreciation, naturally assimilating to one another, no elaboration of details can compensate for an unfavorable first and general impression, nor the toil and labor, bestowed upon them, meet their

reward, unless kept in proper relation, harmony, and subordinate service, to the whole. The principle is the same, whether the drawing, or picture, be the representation of the most simple object, drawn by a tyro in art, or the most elaborate composition, by the most accomplished artist. Let it be clearly and expressly understood, therefore, by the pupil. He should first learn to draw simple and single parts; then objects and figures; then pictures; and consider each a whole with its parts—that whole assuming the relation of a component part to a greater whole—and thus progressively advance his capacity of observation and execution: never losing sight of the broad principles, upon which he has started, and upon which he must still rely, in the highest efforts to which he may be tempted hereafter. The proper understanding and appreciation of these principles, will direct the judgment aright in estimating the value of detail in particulars, in the expression of a general idea, and conveying its desired impression. For, although, a drawing of an oak-leaf, if the mere representation of an oak *leaf* be the object, should be exact and true, in all its markings and peculiarities, it does not follow, that, in drawing the *tree*, we should draw every leaf of it; the importance of minor details being, to a certain degree, lost in the general effect of the whole. And yet, he who can not draw the one, will never succeed in producing a correct resemblance of the other. The leaf is the easiest, and, if properly studied, develops as clearly the principles of design, by which the tree may be expressed; and, therefore, should be placed first before the pupil. In its application to the higher departments of art, this leading principle is still more impressive; but, at this period of the student's advancement, it would be out of place, to enter as minutely into the subject as may be done hereafter, when his discrimination and capacity may be more matured, and his mind better prepared for its comprehension.

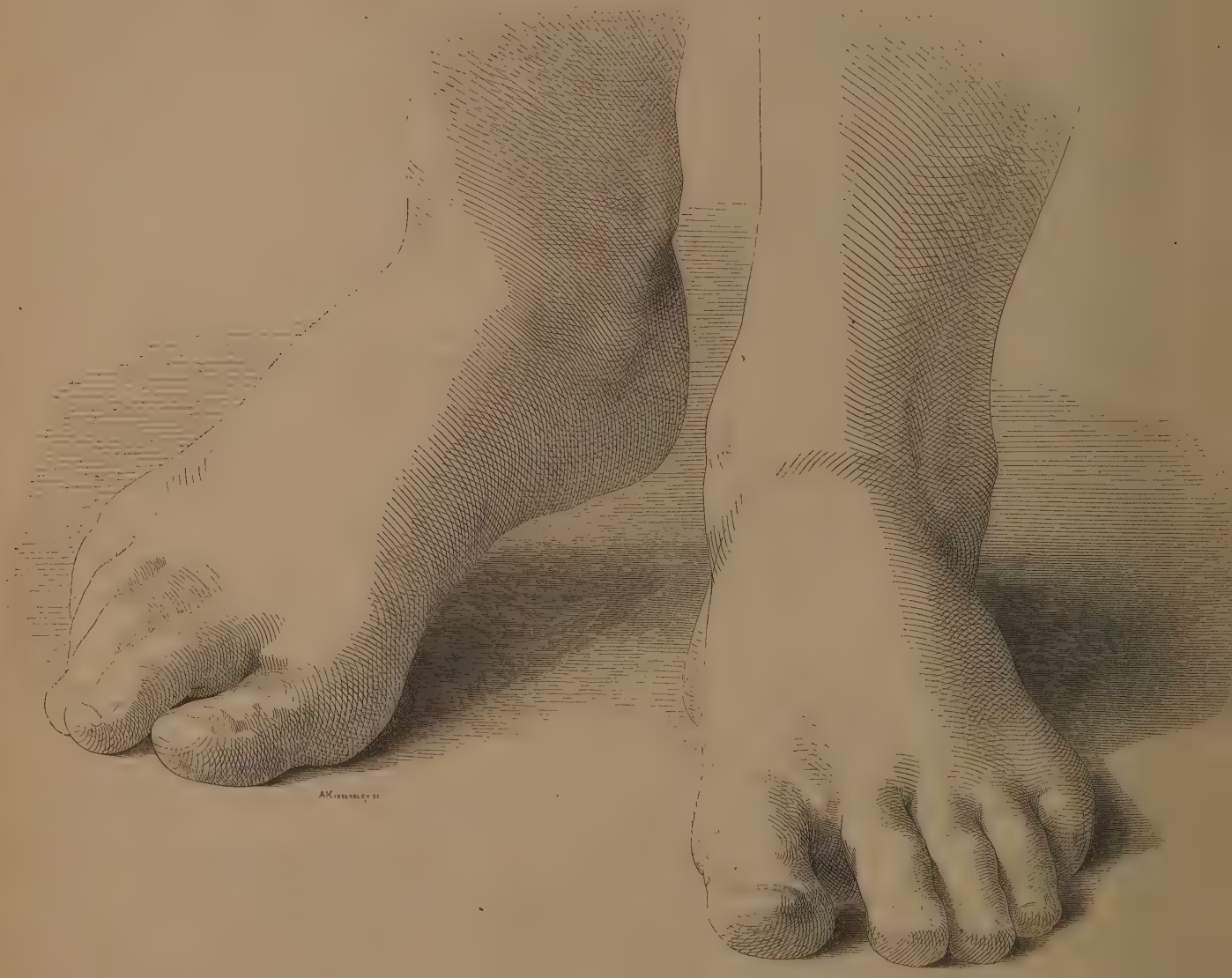
85. A well-formed foot is rarely met with, in our day, from the lamentable distortion it is doomed to endure, by the fashion of our shoes and boots. Instead of being allowed the same freedom as the fingers, to exercise the purposes for which nature intended them, the toes are cramped together, and of little more value, than if they were all in one—their joints enlarged, stiffened, and distorted,—forced and packed together; often overlapping one another in sad confusion, and wantonly placed beyond the power of service. As for the little toe, and its neighbor, in a shoe-deformed foot, they are usually thrust out of the way altogether, as if considered supernumerary and useless, while all the work is thrown upon the great toe, although that, too, is scarcely allowed working-room, in its prison-house of leather. It is therefore hopeless to look to a foot, that has grown under the restraint of leather, for perfection of form; and hence, the feet of children, although less marked, in their external anatomical



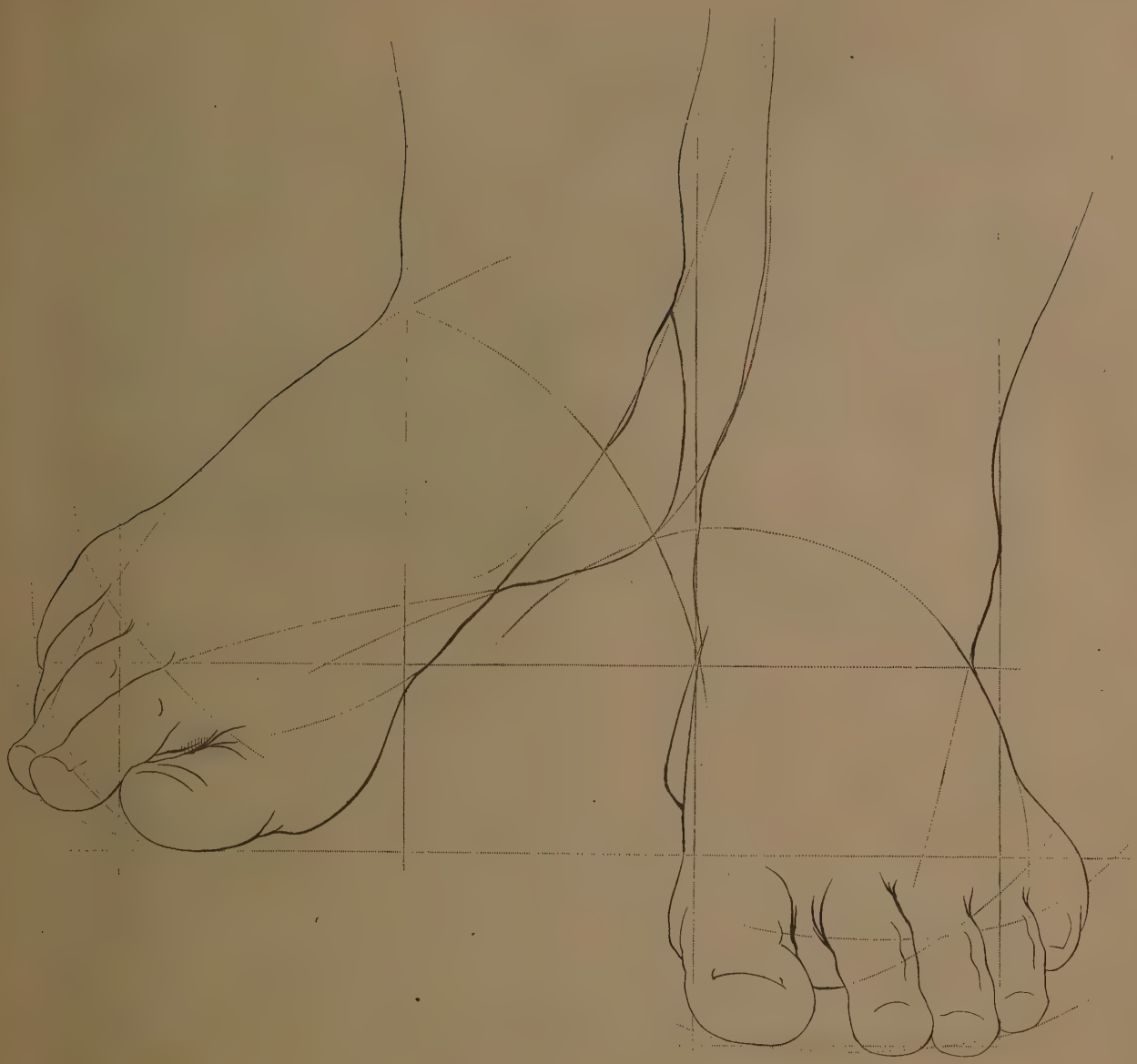
development, present the best models for the study and exercise of the pupil in drawing. It is unfortunate, that so few fine specimens of the hand and foot have remained to us, from the antique, from the fact, that these extremities have been more liable to injury and loss, from the casualties and neglect to which they have been subject, during the long night of ages of ruin and desolation through which they have passed; but we have enough to show how well the ancient artists understood and appreciated the beauty and perfection of these members. If possible, the pupil should always have by him one or two good specimens from the antique—and they can be readily procured in plaster—to correct his judgment, and impress upon him the true and perfect form of the foot; for he will rarely meet with it, in nature, and yet these very standards of perfection are derived from nature

86. An example on the next page, drawn from the antique, shows now rarely, if ever, is found in one living model, whose feet have endured the restraint of shoes, the combination there seen, of beautiful form and proportion, ease and elasticity of motion, as well as admirable expression of adaptation, and power for use and purpose throughout. And how have they been produced? By no magical touch. Although the work of genius, genius could have done nothing, unless aided by knowledge, observation, and practical experience: and this is the business of the student, and must form his constant pursuit—for there is no end to the pursuit of excellence in art. The spirit and capacity for investigation are gradually advanced, as the perception and taste become quickened and purified. An unsatisfied thirst for knowledge for ever leads to the great fountain-head of all art—the study of nature; and no sure system of education in art can be devised, diverging from this well-tried course. To possess this capacity for just selection and combination, we must become familiar with nature as she is. By study and comparison, the eye must be made sensitive, and, by practice, the hand must be made obedient. We must become practically familiar with the power of art, in the imitation of nature, before we can select with proper judgment, and combine with knowledge, her diffused beauties. It is this high attainment that marks the best works of the ancient masters; and, while they enchant all with their marvellous beauty, the most learned pronounce them faultless—true to nature: and yet, in nature, we look in vain to find similar happy combinations. But to pursue this subject farther, at this time, would be to lose sight of the purposes of these elementary instructions, which are intended to lay a secure foundation; glancing, occasionally, at the more finished structure, by way of encouragement and incentive, to those who may not be sufficiently impressed with the importance of so broad a basis, and who might otherwise weary in the good work.

87. Without entering into farther detail, with regard to the following examples, they are placed before the student, with the hope that enough has been said already, to render the principles of drawing easy of comprehension and practical application. One thing can not be too often repeated, or too urgently impressed upon him—the importance of a correct outline. An early-acquired and premature facility, in expressing tints, "in working up a drawing," as it is termed, has led many astray from the first purpose of art—truth and accuracy—which a piece of chalk or charcoal, in a skilful hand, will express more certainly, on a rough wall or board, than the most delicate touch, or the most exquisite materials, can ever accomplish, unless guided by sound elementary knowledge of the great first principles of art. It should be remembered, too, that shadows and tints have an outline to be preserved, and accurately expressed, in accordance with the effect produced on the object of imitation; less strongly marked, in most

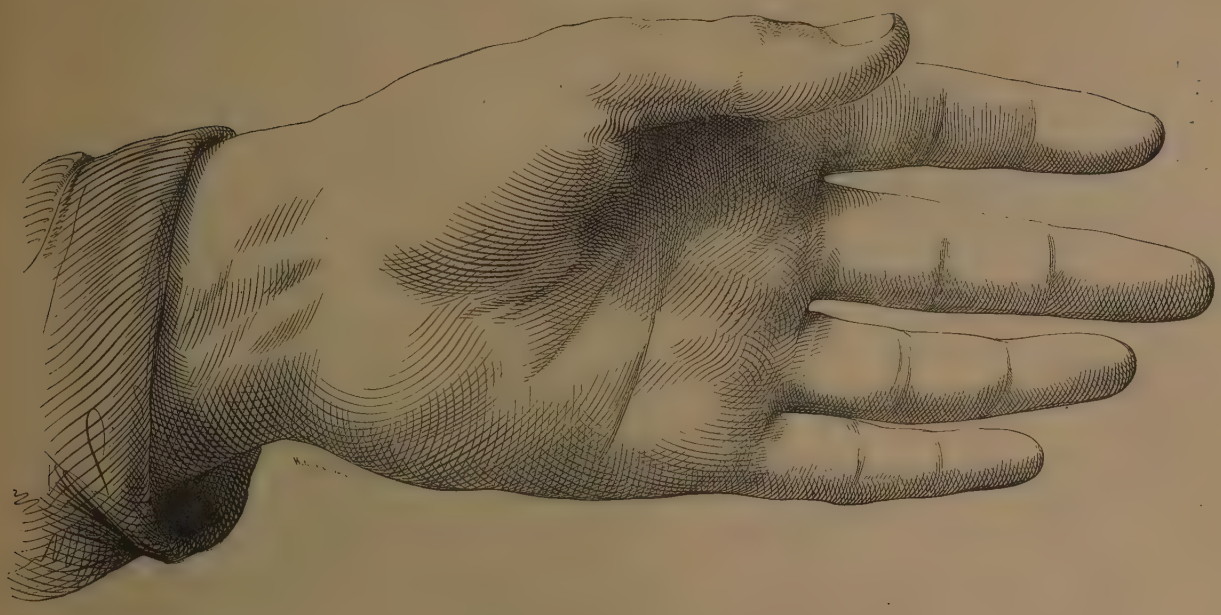


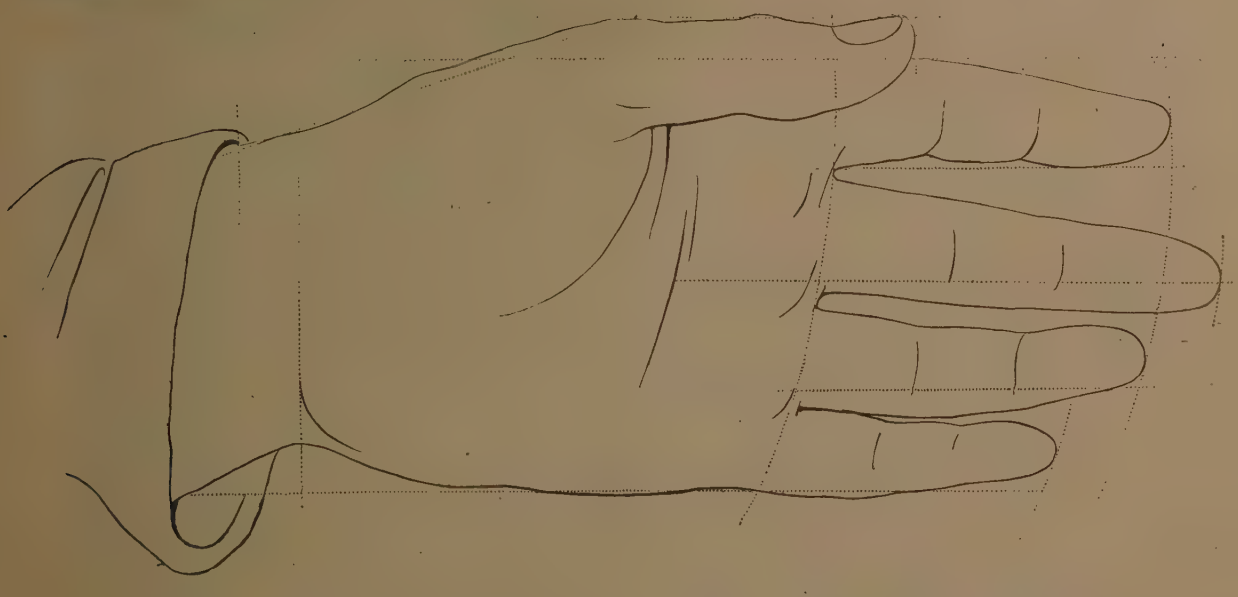
cases, it is true, but it is there. By the aid of shadows is developed the true form of the model; and to parts more or less advanced or depressed, are thereby given a location, as decided and certain as if seen in profile. So truly can they be expressed, on a flat surface, that a sculptor can model a bust, from a picture, and the eye may be so completely deceived, by their close representation, as scarcely to distinguish the reality from its counterfeit. It is, therefore, as essentially necessary to preserve the forms, masses, and proportions, of shadows, as of the more



substantial parts of the object of imitation; and the surest way to acquire facility in expressing them, is to proceed in precisely the same manner with them, as with other details and accessories.

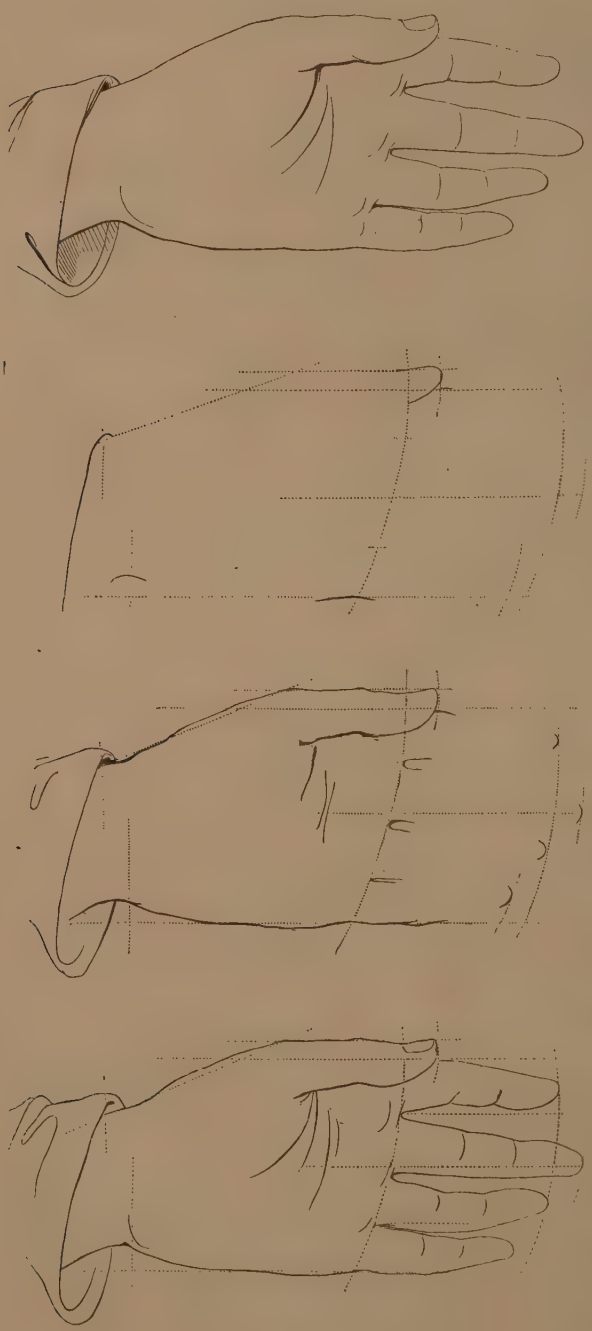
88. The Hand, although more difficult to draw than the foot, not only on account of its peculiar structure, but the great variety of action and position, of which it is capable, presents greater facility of study to the draughtsman, is better understood, and more familiar to our obser-



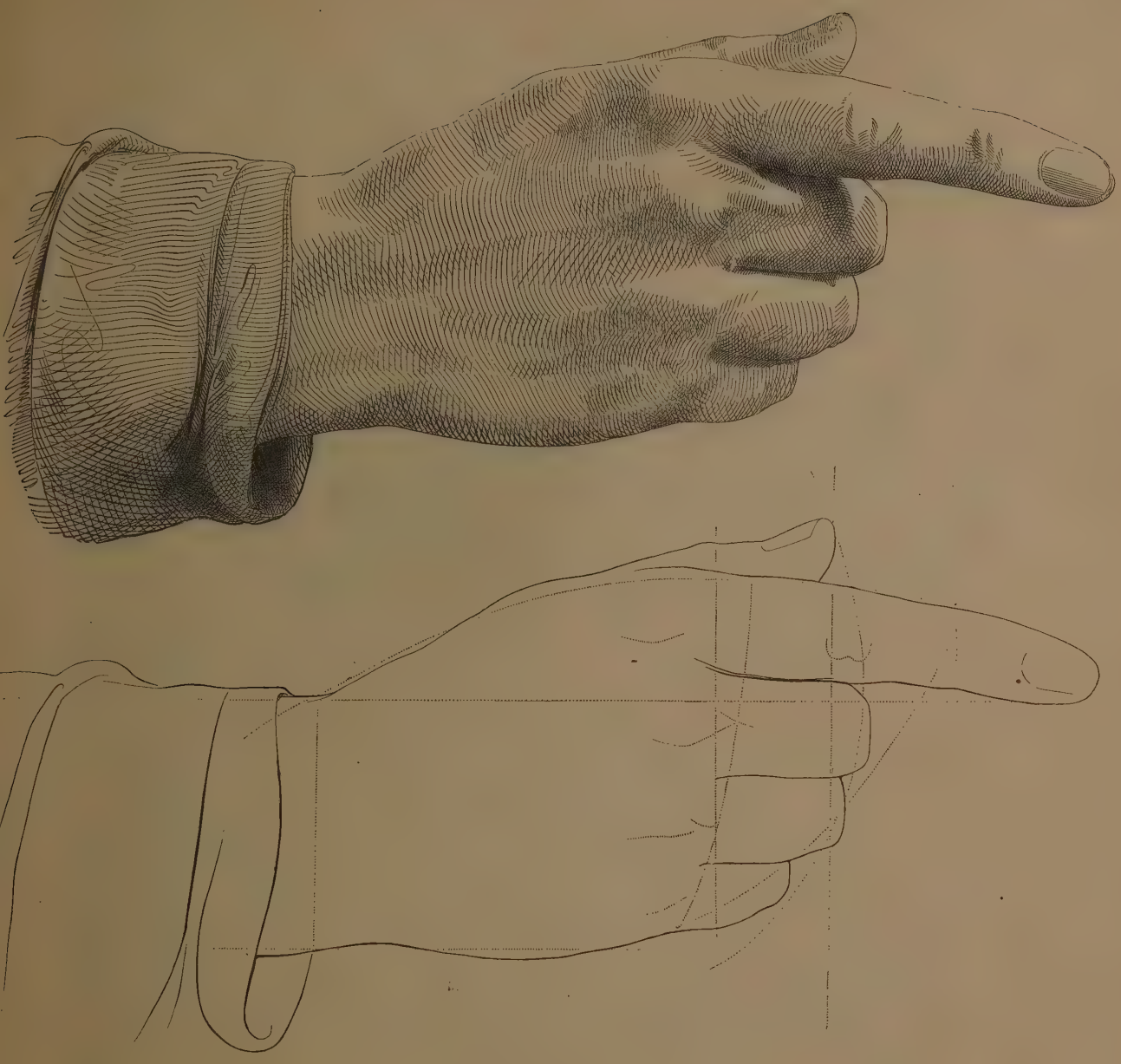


vation. What has been said, with regard to the difficulty of finding, in nature, beautiful and well-formed feet, does not apply to the hands, for they are often to be met with, of the most exquisite form and just proportions; and there are no objects in nature, the study of which is better calculated to strengthen the general capacity of the student, in the art of drawing. If he can draw a hand, with ease and accuracy, he can draw anything. Let him, therefore, set about the work with earnestness, for success will place him in a position, from which he can look with

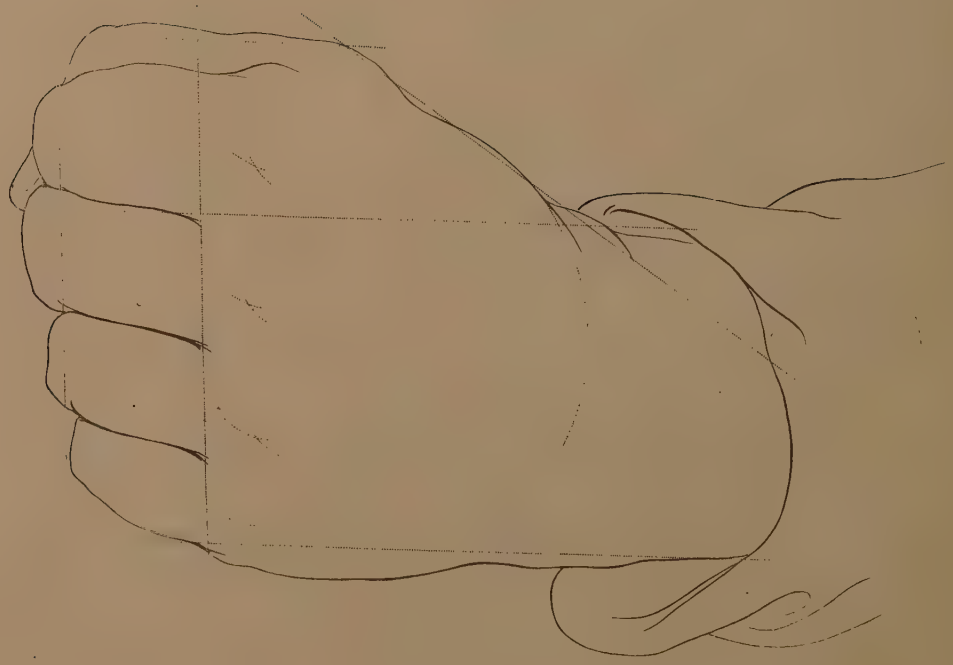
pleasure on the labor by which it has been attained, and forward to the assured consummation of his most ardent aspirations.

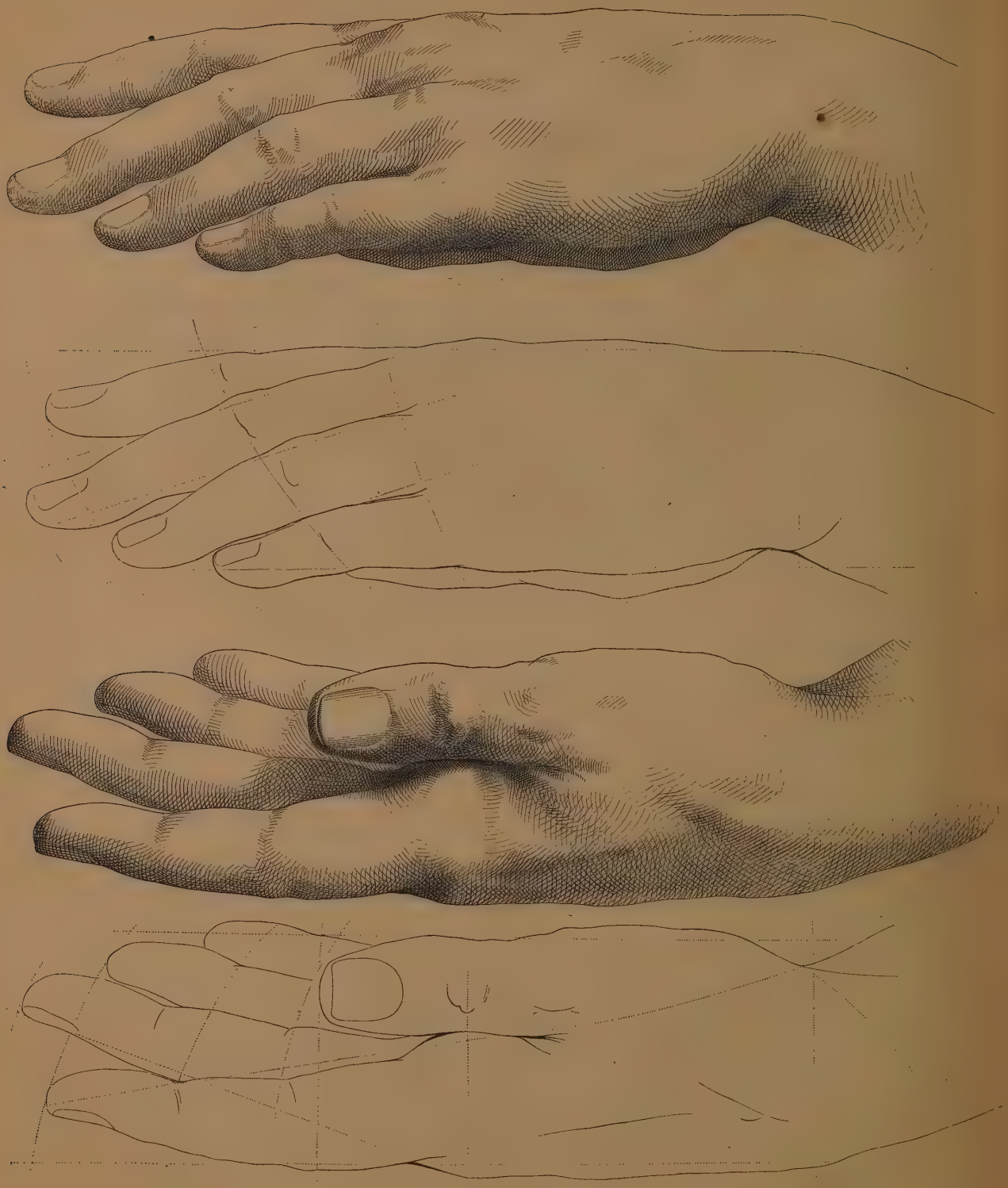


89. If the importance of first securing the general form of the head and foot has been already felt, it will be evident, with greater force, in drawing the hand, especially when the fingers are extended. Let us, therefore, have recourse to a reduction of the outline of this first example of the hand, to explain more fully the method or process by which it can be most readily obtained. When once the general form of the principal and most massive portion of the hand, extending from the wrist to the beginning of the fingers, is ascertained, and indicated with accuracy, next decide upon the length, expansion, and relative position, of the fingers, as a group, and then proceed with each, in its turn of relative importance, continually comparing and verifying your conclusions, as you advance, by the method already explained; never losing sight of the general character of the whole, and keeping the parts in perfect harmony of action with it. This example may be found even more difficult than those that follow; but it is well for the pupil to have his strength tested, and if he has earnestly, and successfully, followed the line of study marked out for him, thus far, he may be safely said to be even now within sight of the more pleasant ways of art, with assurance of strength and capacity to enter upon the broad and boundless field that lies before him. A little farther, and the elementary work is done, and another, and higher, is begun. But, before the one is



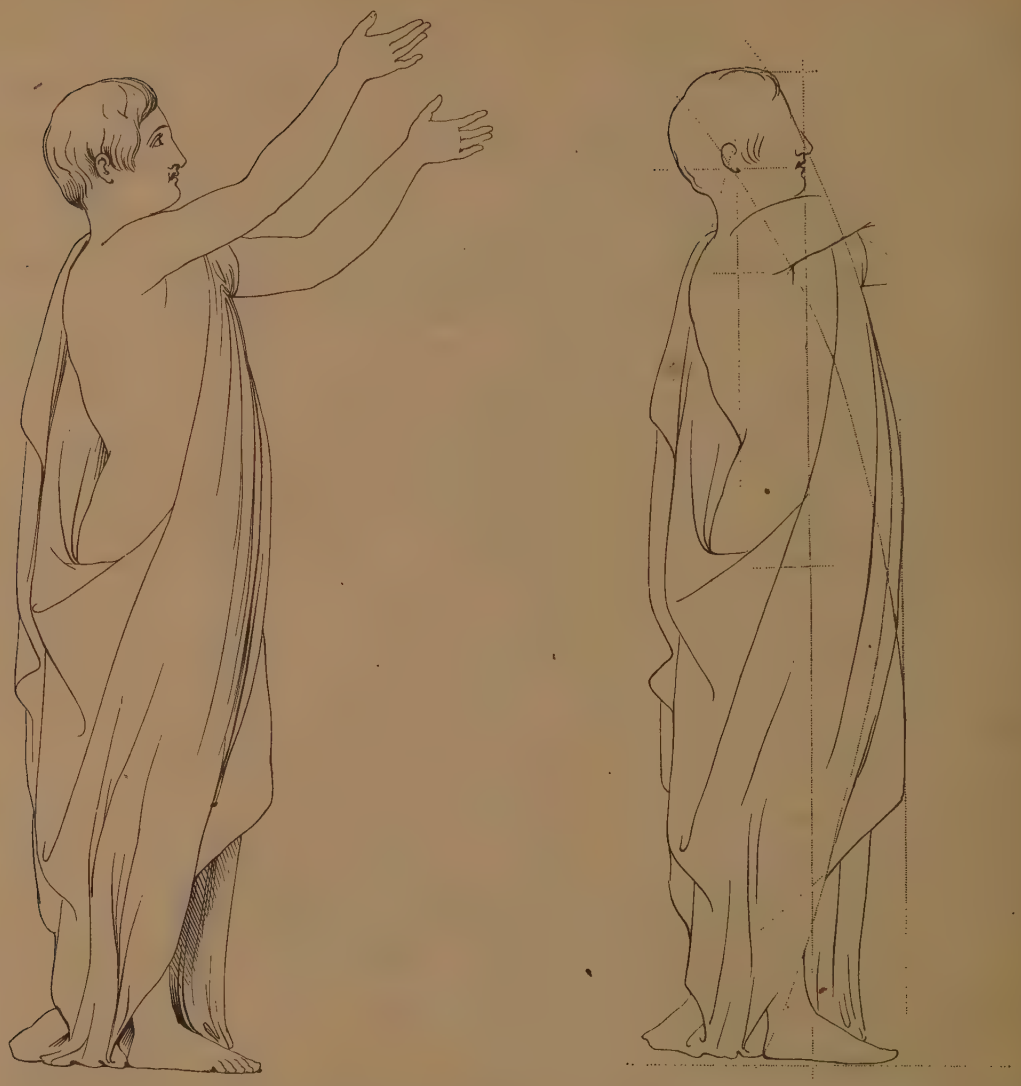
accomplished, or the pupil prepared to enter upon the other, he must be fully impressed with the practical application of the general principles of design, which it has been the purpose of these pages to inculcate, not only with reference to the examples placed before him, but to all other objects. He must not only possess a perfect comprehension of the method, but practically assure himself of its value, by repeated and careful trials.





90. After having required the devotion of so much time and study to the delineation of the head, hand, and foot, the figure, as a whole, might appear of sufficient relative importance to demand a larger space than will be devoted to it, at this time. It should be remembered, that these elementary instructions are inductive and preparatory to that more concise consideration and study of the anatomical construction of the human frame, essential to those who aspire to the attainment of excellence in the higher branches of art, which do not strictly belong to the mere rudiments of drawing. Until the mind and hand have been schooled to act harmoniously together, until the broad principles of design are first developed to the understanding of the pupil, and he is made to feel wants beyond those of the beginner, it is not only useless, but even prejudicial to his advancement, to confuse his mind with theories and treatises, which he can not fully understand, nor practically apply. To talk to him of bones and muscles, before he has attained sufficient command of hand and eye to draw, with at least some degree of facility, more simple forms and objects, is like pitching one, headlong, into a deep and rapid current, to teach him to swim.

91. If the interest of the student has been excited, and his attention bestowed upon what has been already said, and so earnestly urged upon him, and he has mastered the examples of the head, hand, and foot, already given, he will experience but little difficulty in drawing any form or figure that he may attempt. When it is said that he possesses the capacity to draw a figure, it should not be understood, thereby, that he is capable of that careful elaboration, or minute exactness, in lines or details, that is only acquired by long practice, and repeated acts; but, he will be able to express the general form, proportions, and action, of his model: he will be able, thence, to



descend to the parts and details: he will be able to do this upon fixed and certain principles, which, if properly understood, appreciated, and applied, will never mislead him.

92. Let the pupil now attempt to draw the outline of this first example of the full figure, without having recourse to measurement, and without reference to other rules of proportion, than such as may be suggested by the careful observation of the figure before him, and by precisely the same method by which he has drawn the head, hand, and foot, separately. He will see, at a glance, that a perpendicular line, drawn from the upper lip, would intersect the point where the

instep joins the leg; and, having decided upon the height of the figure, he has already a certain basis, and starting points. Next, observe well the relation of the parts, proportions, and character of the general contour of the figure to this imaginary perpendicular line. The drapery takes one continued sweep, slightly modulated, by the form of the figure, from the heel to the left shoulder; which line, if farther extended, would touch the outline of the forehead, intersecting the assumed perpendicular line on the nostril: this gives, also, the direction of the head. The lines of the back and shoulders, those of the left leg, and the more massive portions of the figure, are, in like manner, to be ascertained, drawn, and verified (FIG. II.). The hands and arms,

the most difficult parts of the figure, are yet to be drawn. It will be perceived, that the lower point of the union of the right hand (FIG. III.) with the wrist, is on a level with the top of the head; and that the corresponding point of the left hand is on a level with the nostril. The distance of the hands from the head are next to be ascertained; which may be done by comparison with the parts and proportions already decided upon, and by the imaginary extension of such certain lines, already drawn, as may most readily direct to the desired purpose. For example: if the outline of the hip were extended upward, it would strike the outline of the right arm at the elbow, and continue with it to the wrist—which has been already decided upon, as being on a level with the top of the head. Thus the position of the right hand is ascertained; which may be farther verified, by the method of comparison, and studying its relation to other parts. The true position of the right hand, once secured, those of the left hand, the arms, etc., may be easily obtained; and, having completed the *general* contour of the figure, but little difficulty will be encountered in the delineation of the parts and details. The position of the head having been already ascertained, draw the features in harmony with it (56); and thus proceed with the hands, feet, and other details. If the first example given of the hand (89), has been fully understood, and what has been said with reference to it has been practically applied, but little difficulty will be found in drawing the arms, etc., of this figure. Remember to compare and measure, by the eye, every part, proportion, and line, of the object before you (FIG. IV); and do not forget, that beneath the drapery there are limbs, whose action, and just positions, are to be preserved (62).

93. Let it be presumed that the pupil has succeeded, probably not without repeated efforts, in producing a fair drawing of this figure: its lines, its proportions, the bearing and relation of its parts and details to one another, are strongly impressed upon his mind. While these impressions are still vivid, close the book, and try how true your memory may be; how far it can be trusted, by drawing the figure by its aid—for this is another and most important application of the method, which has been urged, from the beginning, as one of universal practical application. When made familiar to the draughtsman, by practice, he is enabled to seize, at once, the leading character of an object, however restless it may be, or transient his opportunity of observation; to fix it upon his memory, without drawing a line at the moment, and to reproduce it at will. It is by this matured capacity that he is able to catch the fleeting expression of a face, or the action of a figure, and to represent them with a degree of accuracy, as wonderful to the uninitiated as serviceable to him; for it gives him a power, in observing and recording the changing beauties of nature, which is denied to those who can only draw the inert model before them.

94. Without crowding the limited space allotted to these elementary instructions, with more numerous examples of the figure, than will be found scattered throughout the chapters devoted to them, and directing the pupil to the study of nature, and such good specimens in prints, drawings, or pictures, as may be within his reach, it may be expedient to give him, in conclusion, some general ideas of the proportions of the human figure; which are not intended to be used as recipes for "building up figures," but to aid in the observation and delineation of nature.

95. The Proportions of the Human Figure have been a subject of much consideration, and volumes have been compiled, by artists and others, in relation thereto. Although generally agreeing, in the most important points, there is still so much difference of opinion, with regard to details, that it would tend rather to confuse, than elucidate the subject, to the mind of the student, to place before him the various opinions and rules that have been published from time to time. Should his pursuit of art be extended to its higher walks, he will, in that great school of art—the study of nature—aided by the best and most approved productions, learn to form just conclusions, and, weighing the value of conflicting opinions, deduct for himself such rules and principles of proportion as may, in his mature judgment, form the best and truest standard of excellence and beauty.

96. The scale of proportions, most generally received, is that of Gerard de Lairesse; and they will be found ample for the present purposes of the student. It will rarely happen, that he has occasion to draw a figure perfectly erect, and with all the limbs seen, without some degree of foreshortening; due allowance, therefore, must be made for these circumstantial variations.

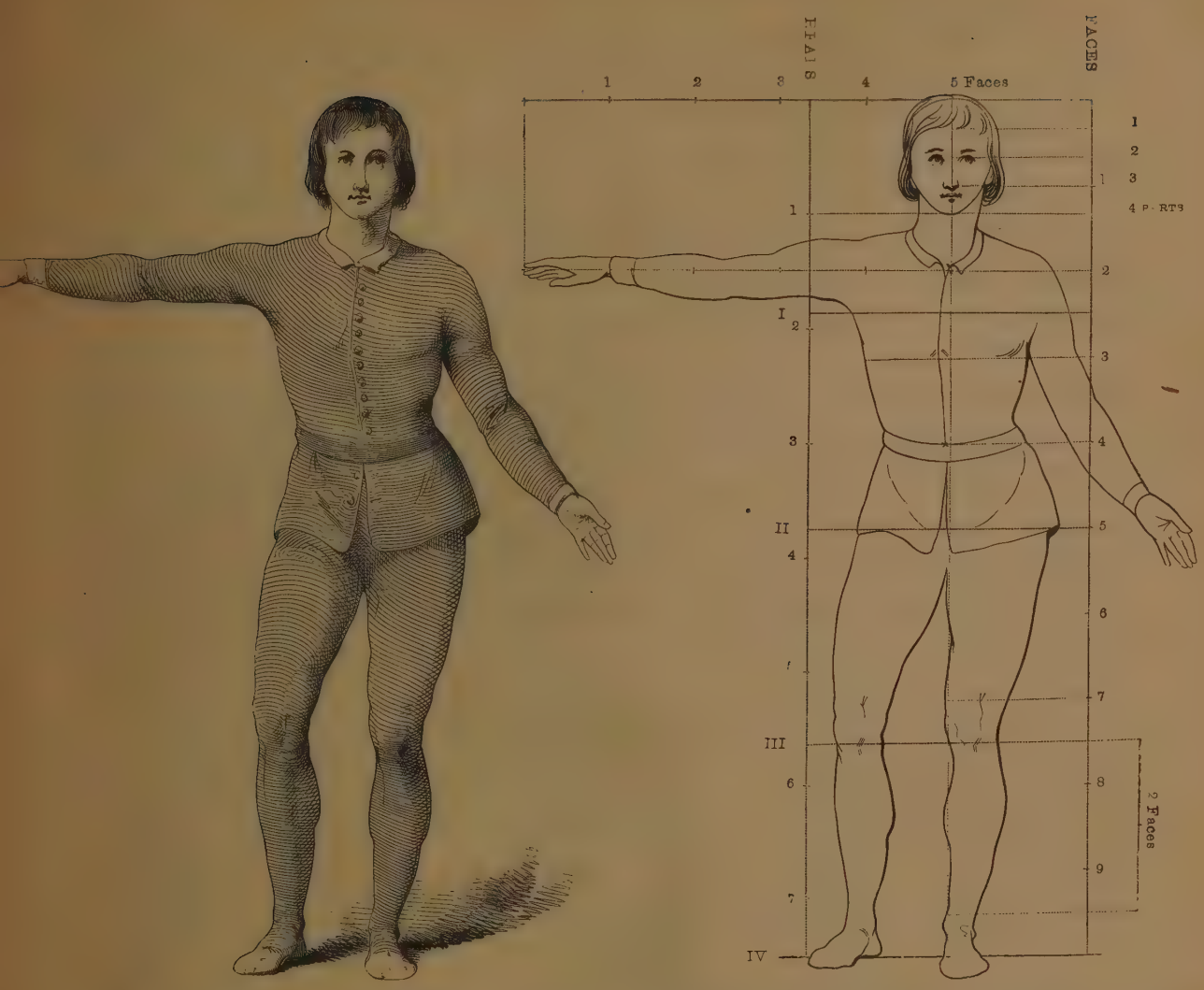
Taking seven and a half heads, as the average proportion in the height of a well-formed man, and dividing each head into four parts, will necessarily give thirty parts to the whole figure. Three parts make up the length of the visage (56)—consequently, ten faces will be the measure of the Figure: and thus its proportions, by that scale:—

1 face	from the crown of the head to the nostrils.
1	from the nostrils to the extremity of the throat, or hollow between the collar-bones.
1	from that point to the bottom of the breast.
2	to the bottom of the trunk, which is one half the whole height, or centre of the figure.
2	to the upper part of the knee.
½	or 1½ half parts, is contained in the knee.
2	from the lower part of the knee to the inner ankle.
½	or 1½ parts, thence to the sole of the foot:—making
10	faces to the figure.

The quarter divisions of the figure are at—

I. The armpits. III. The knees.
II. The bottom of the trunk. IV. The sole of the foot.

When a well-formed man extends his arms to their utmost stretch, the measure, from their extremities, equals his height.



The foot is generally considered as equal to one sixth part of the height of the figure; but this measure is excessive.

The longest toe is equal to the length of the nose.

The hand is the length of the face.

Twice the breadth of the hand gives its length.

The breadth of the hand is equal that of the foot.

The thumb is one nose in length.

These measures may suffice for imparting a general idea of the proportionate dimensions of figures; at least, they will be found sufficient for the pupil at this time.

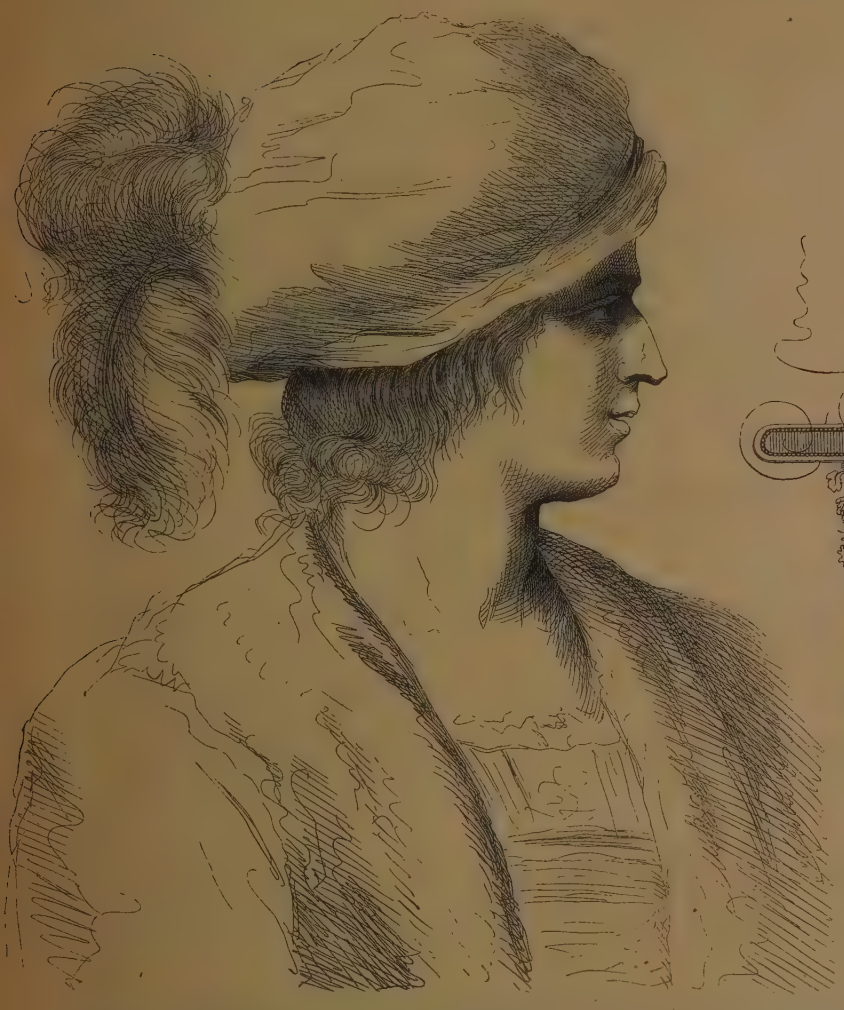
97. In conclusion, by reference to some of the most celebrated of the antique statues, it will be seen how nearly one average height of the figure, and proportion of the head to it, has been observed. The Farnese Hercules is, in height, supposing the figure erect, seven heads, three parts, and seven minutes (twelve minutes are allowed to a part); the Antinous of the Vatican, seven heads and two parts; the Laocoon, seven heads, two parts, and three minutes; the Dying Gladiator of the Capitol, eight heads; the Apollo Belvidere, seven heads, three parts, and six minutes; the Venus de Medici, seven heads and three parts; and the Grecian Shepherdess, at Naples, seven heads, three parts, and six minutes.

98. It should be borne in mind, that the proportions of the figure vary in almost every individual; and from infancy to manhood, they undergo most marked changes. Taking the size of the head, as a scale of measurement: the whole length of a child, two months old, will be found rarely to exceed four times the height of his head;—at one year, four and a half heads;—at three years, five and a quarter;—at five years, scarcely six;—at ten years, six and a half;—from fourteen to sixteen, about seven;—and thence, to manhood, seven and a half, and sometimes eight.

CHAPTER IV.

THE RUDIMENTS OF DRAWING.

OF MANNER OR METHOD—THE ART OF WRITING, IN CONNEXION WITH DRAWING—GENERAL INSTRUCTIONS, ETC.—CONCLUSION.



"Rules are to be considered as fences, placed only where trespass is expected."—REYNOLDS.

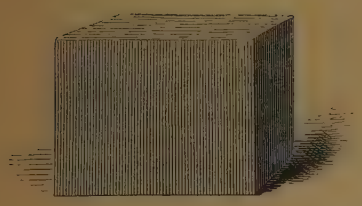
THUS far, the use of the pen, as an instrument for drawing, has been strongly urged, for reasons already explained; nor should it ever be laid aside or neglected. Too great importance is often attached to the mere imitation of MANNER, particularly in copying from the works of others; and if more thought and pains were bestowed upon the principles of design, and less upon the imitation of the touch or peculiarities of individual artists, there would be more leaders, and fewer servile followers, who, in emulating and imitating the means, lose sight of the great ends of art.

99. The test of excellence, in a method or manner, is its approach to precision, and distinctness of expression, by which an object, or thought, is most clearly represented. He that has a clear perception of the one, or the other, if assisted by proper education, will not be long in finding a manner or method of conveying it, in his own way, far better than by any he can borrow of another. It is often painful to see the toil bestowed upon a drawing, on which weeks and months have been worn away, in efforts to attain the peculiar touch of an example set before the pupil, without one thought of the sentiment, general character, or expression, of the original: to which the work, method, or manner, was only considered secondary by its author—as if, to write like Shakespeare, meant no more than to copy his handwriting.

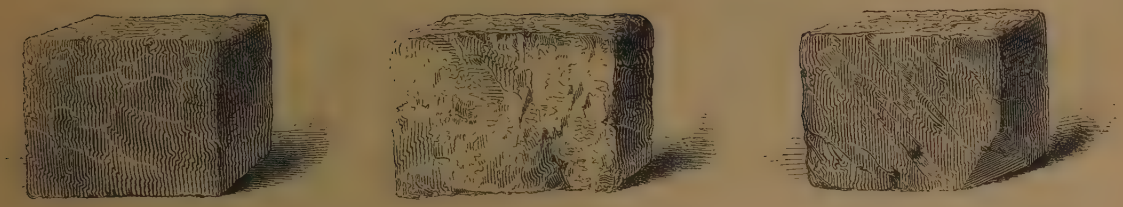
100. Should the pupil now desire to try the pencil or crayon, he may do so, with profit and propriety; and he will find the use he has made of the pen has given his hand a degree of precision of touch, that he should never suffer it to lose in the use of other instruments, that are apt to lead to carelessness, because their work can be readily erased, or errors committed, readily disguised. In schools, as well as in private instruction, Indian rubber, stale bread, and all other devices for erasure, should, as far as possible, be kept out of the way; and thus errors will be avoided, by the absence of the ready means of other correction than a renewed effort, the preservation of their evidence, and consequent remembrance, and care, to prevent their recurrence in future attempts.

101. Although it might be better to leave the pupil to the selection of his own method, or manner, of expressing that which he desires to represent, after he has perfected its general outline, and to direct his attention to such a variety of drawings, by different artists, as may be within his reach—rather than those by any one individual hand—yet, a few hints on the subject may be found serviceable to him.

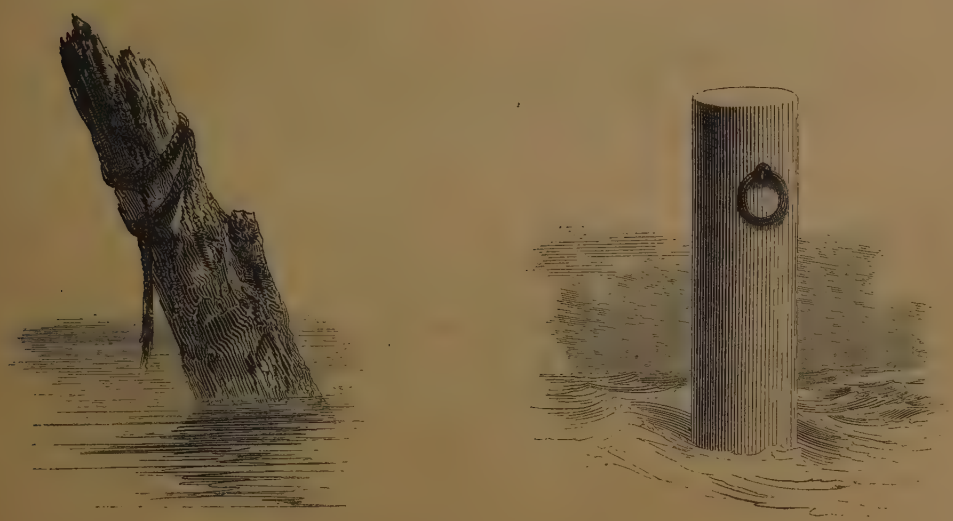
102. The instructions which have been given, in reference to the use of the pen, are equally applicable to the pencil, crayon, or chalk. The practice of the primary lessons, on straight and curved lines, will be found to have been essentially useful, in acquiring that command of hand, without which, proficiency in drawing is of no easy attainment. As in nature, objects take every variety of form and direction, so should the lines or touches, used in their delineation, have equal freedom in their direction, and always adapted to the purpose, and as expressive as possible, of the true form and character of the original. This may, at first, appear difficult; but, by observation, study, and practice, it may be soon acquired.



Suppose, for example, we desire to represent a square block, with a smooth, even surface: the greater degree of evenness and regularity that we can preserve in the lines, the nearer we will approach its faithful resemblance; and if, on the other hand, its surface be broken, or uneven, we must have recourse to lines, by which that character can be most readily expressed.



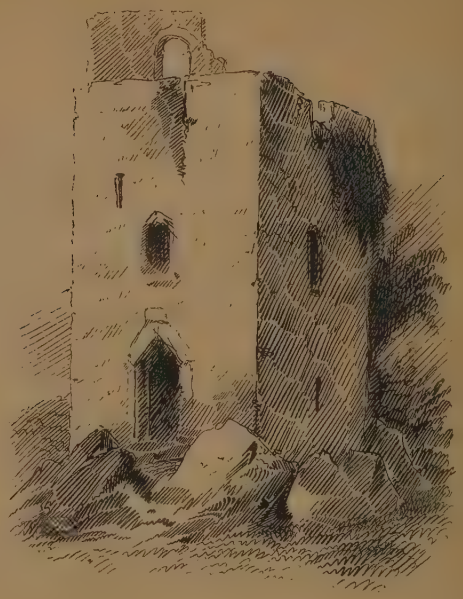
To represent a rude stake, water-worn and scraggy, far different lines are requisite, than if the object of imitation were a smooth and well-rounded post.



It would be in vain to attempt the representation of the effect of a brisk breeze, and a dead calm, upon the water, by lines similar in character; or, by the same touch, to express the woolly

and rounded form of a sheep, and the hairy covering, and more abrupt lines and action, of a goat.

103. The imitation, by beginners, of off-hand sketches, or memoranda, by practised artists, however spirited, and often effective, should be discouraged. They are, frequently, little more than the short-hand notes of a writer — intelligible to him, but only conveying, to others, faint and uncertain ideas — dashed off in a moment of haste, or under circumstances that would preclude



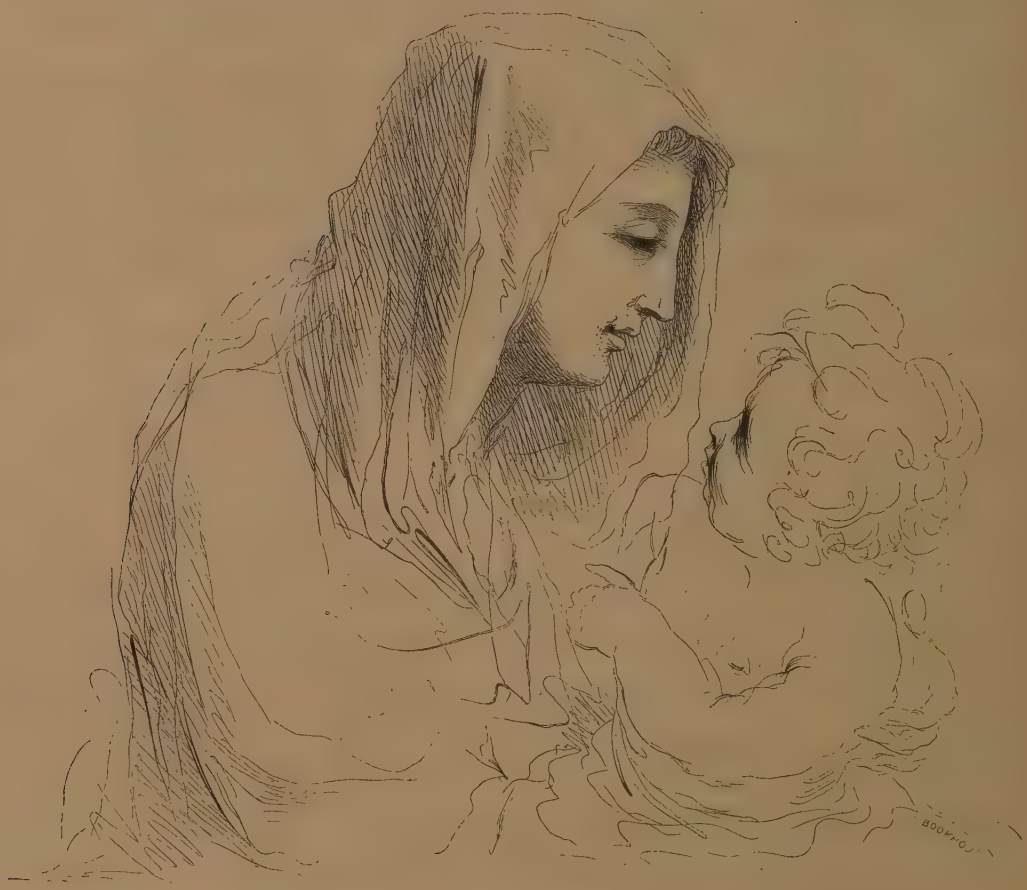
the possibility of doing more at the time, intended for the private use of the artist alone, and serving to preserve the recollection of the subject upon his mind, for future elaboration. To him, such sketches are invaluable; but, for the use of others, something more is required. A

drawing and a sketch are two different things. Although one must learn to draw, before he can sketch, the capacity for one is dependent upon the other.

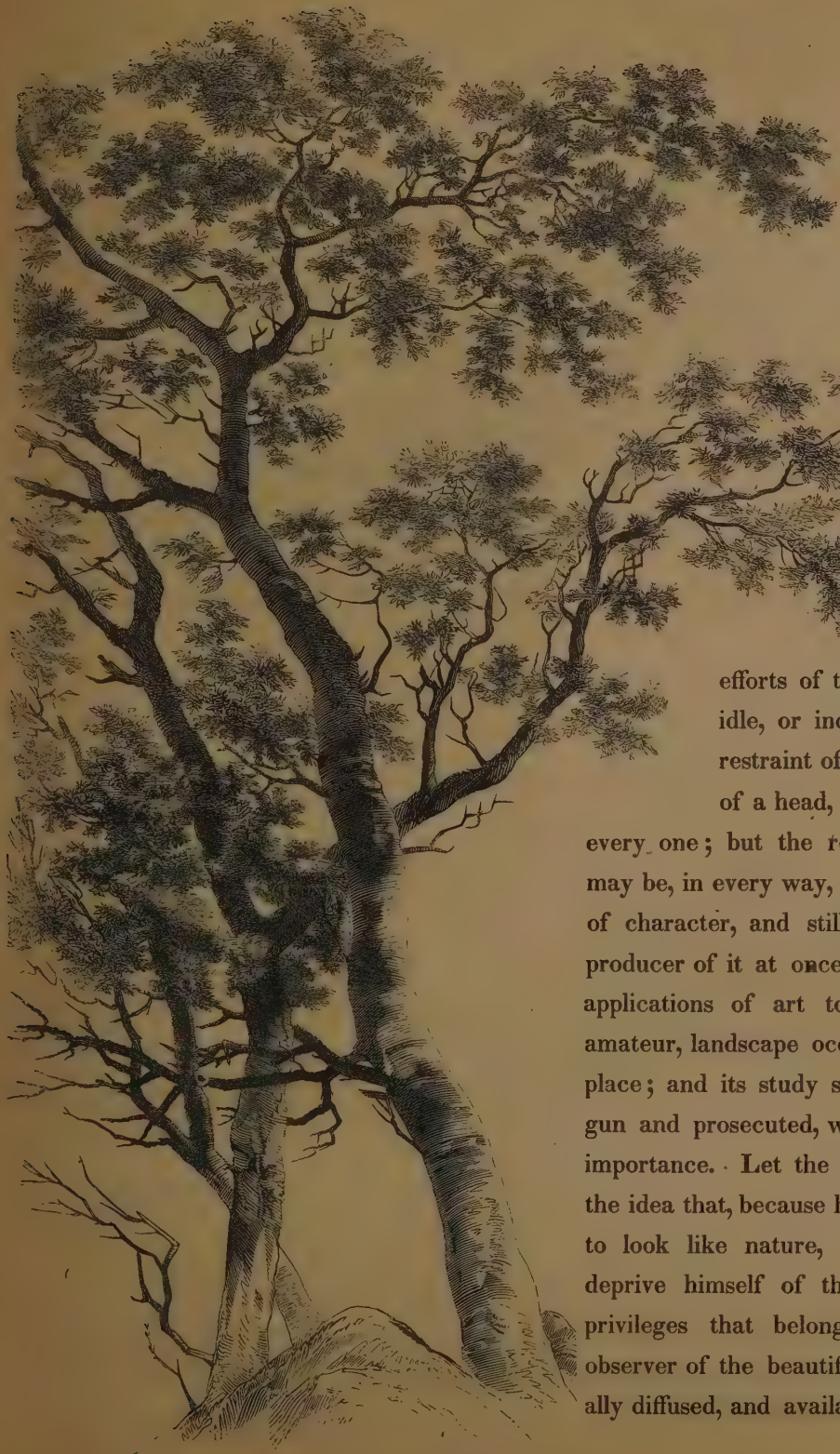
104. What can a beginner learn, by the imitation of such a sketch as the following?—and yet, it is a fac-simile, the size of the original, of Wilkie's first sketch or idea, of his picture of the Rabbit on the Wall. To the eye and understanding of the artist, every line may have had purpose and meaning; but, beyond the interest it excites, as the germ of a finished work of art, it is, in a measure, valueless: and as an object of imitation for the student, it certainly presents but little, from which he can derive advantage. Even in sketches more defined and intelligible, where often are found, combined, a degree of grace and sentiment, rivalling more finished productions, there is still a freedom of line, and manner, belonging to an experienced hand—one well schooled and practised in design—and evidence of disregard to mere manner, or method of expression, which none but a master in art dare attempt. This very freedom, and capacity of reaching, at once, the higher attributes of art, by means so simple, yet certain, is attainable only by first learning to draw with accuracy and precision; by a perfect understanding of the use and power of lines, as well as practical ability in their direction. Many a mere beginner could produce more regular lines, and, in the common perversion of the term, a more "finished" drawing, than that of a Mother and Child, presented on the next page, from a pen-and-ink sketch by Guercino; yet, such a sketch could only be produced by one who could do more. Its excellence does not alone consist in its manner, or mechanical execution, which we might imitate for ever, without advancing one step to the ability of originating one comparable to it, in point of grace, character, and expression, unless we possessed, like Guercino, well-grounded knowledge, feeling, and capacity, far beyond the mere counterfeiting of another's hand. With an understanding of the principles of design, familiarity with nature, and a sense to appreciate the beautiful; with the possession of that command of hand, the importance of which has been so earnestly urged upon the pupil, and the means of its attainment placed before him; with careful observation and practice, he will soon acquire a facility of expressing himself, which, growing into a habit, will establish a *manner* for himself, far more serviceable, and better, than the imitation of that of another, however excellent or effective it may be.

105. Not that the pupil should consider the works of others unworthy his study and emulation; but he should learn, rather, to value the higher attributes of a work of art, above the less important peculiarities of the artist's hand, which are often the result of change of purpose, or

accidental circumstances, or carelessness in the production of a sketch. Many a beautiful idea has been suggested by a few random lines; even by an accidental blot, or stain, upon the paper, which the sensitive eye, and fertile imagination, of the artist have detected, and his ready hand developed with a few touches, that defy imitation. Often, in sketches, the artist may appear to have dashed forth, in bold explorations, in search of happy combinations of line, effect, and expression, upon which the beginner should venture with caution, and never from mere affectation. Let him study the spirit and motive of good sketches, whenever he can meet with them; but, let him learn to draw, before he begins to sketch.



106. While on the subject of *manner*, it may be expected that something should be said with reference to trees and foliage; but all the rules and recipes, that ever were promulgated, can not teach one to draw the most simple weed, without a feeling and capacity for the imitation of form. Landscape is too often regarded as a sort of safety-valve, to let off the exuberant



efforts of those who are either too idle, or indifferent, to endure the restraint of study. The distortion of a head, or figure, is apparent to every one; but the representation of a tree may be, in every way, disproportioned and out of character, and still it is a tree, and the producer of it at once an artist. Of all the applications of art to the purposes of the amateur, landscape occupies a deservedly high place; and its study should, therefore, be begun and prosecuted, with due deference to its importance. Let the learner at once discard the idea that, because he can sketch something to look like nature, his work is done, nor deprive himself of the enjoyment of those privileges that belong to the accomplished observer of the beautiful in nature — so liberally diffused, and available to all. To do this,

there is but one course to be followed. Nature beckons to him, and invitingly spreads forth her varied charms, to tempt him to her sunny fields—at once his teacher, and bountiful provider of all that he requires.

107. How must I draw an oak—how an elm—and how shall I touch a hemlock-tree?—are questions that weary the ear of the drawing-master with their continued repetition; and his reputation frequently is endangered, most unjustly, if he can not only tell them, but teach them how to do it, too, in one short half hour; and yet they themselves, perhaps, do not know the tree, when they see it in nature, much less, when it is represented in a drawing: and if they do, it is more by the shape of the leaf than the general form and character of the tree itself. Let this sort of quackery have no place with those who pursue the study of art with sincerity. Let them learn the first and leading principles of Design; let the eye be quickened to the keen perception and just consideration of form, and the hand ready and certain in its delineation; and then let them go forth, sketch-book in hand, into the fair fields that nature has provided, in her Free School of Art. One group of weeds, by the road-side, or along the murmuring brook, will teach

them more wholesome lessons of the "way to draw them," than all the books that ever were published on the subject. Then, and not till then, will the drawings and manner of others, in the delineation of such objects, be intelligible and useful to them: for, how can they judge of the truth of its representation, when they know nothing of the reality. Drawing is not to be taught like tambour-stitch and crotchet.

108. It is not only difficult, but impossible, to adapt any work of instruction to the various capacities and character of mind, upon which it is to operate, or, to devise any one system that will be applicable to every individual case; but, with the exercise of proper judgment, on the part of teachers and pupils, the elementary principles, which it has been the object of this work to present, in as plain and intelligible a manner as possible, will be found available to all. Children, and those who do not show aptness in comprehending the principles, and their practical application, should dwell on each lesson, and repeat it over and over again — always with care. One step, surely made, if it be but the drawing of a simple straight line, or curve, the next is half accomplished; and thus, progressively, should they be advanced. It is based upon no fanciful theory, that "any one who can learn to write can learn to draw;" but a truism, which the author pledges himself to establish, beyond a question, if aided by the intelligence and co-operation of American teachers, and those who have charge of the education of youth. It is within the means and capacity of all teachers, to instruct their pupils in the rudiments of drawing; and that, too, by an actual saving of labor to themselves, if the improvement of those under their charge has aught to do in the account. The least-pretending country schoolmaster would indignantly repel the insinuation that he did not know how himself, and could not teach his boys and girls, to write — and owns, without the slightest idea of deteriorating from his capacity as a public instructor, that he knows nothing of drawing; and yet, in his daily practice, he blindly teaches to draw, every time he sets a copy, and criticises the imitations thereof made by his scholars.

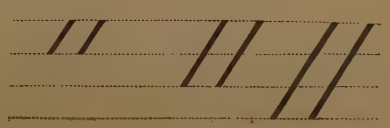
109. The author may be here pardoned a personal indulgence, in reverting to his own school-boy days, if on no other score than that of expressing his grateful recollection of his writing-master. In the thoughtlessness of boyhood, and the unconsciousness of the extent of the benefit then bestowed, his very name has been obliterated from his memory; but too often, in later years, has the influence of his lessons been felt to suffer his grateful recollection to pass away. He came to our village-school, unheralded and unknown — if I mistake not, on foot — a silent, sad, and unassuming man, who, for a pittance, offered to instruct a class in writing. He showed no unmeaning, flourished specimens, but wrote a line upon our teacher's desk, with an ease, and grace, and precision, that gained his engagement. Whether it was his gentleness of manners, his kind encouragement, the winning of his ways, or the magic influence of his system of instruction, writing became at once a delight, rather than a task; for we all set to work, with an earnestness that made us forgetful of the hour of playtime and recreation. He stayed but a few weeks and went as he came, bearing with him many a boy's heartfelt blessing and farewell. He could

not draw, perhaps, in the common acceptation of the term; and yet he taught, by a method well worth the imitation of teachers, the first principles of drawing: and thus it was:—

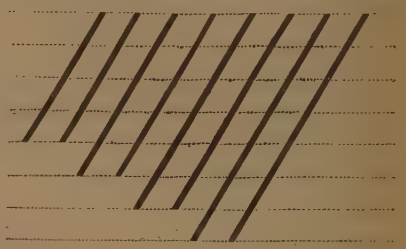
110. In the first place, the old-fashioned "copper-plates," over which we had toiled so long, in comparatively profitless labor, were laid aside, and each scholar was supplied with a quire of fair, smooth letter-paper; for it was a maxim with him, that "young workmen should have good tools." We were then taught to rule it in lines, and only on one side, thus:—

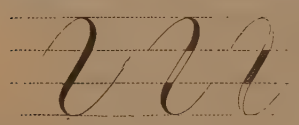
Those that were awkward were helped by him. Neatness was strongly inculcated, and considered as essential—a blot or a smudge, and all was to be done over again; and thus the habit was, from necessity, soon acquired and maintained. Soiled, inky fingers, and blotted copy-books, were seen no more; and, what can not be said of all school-boys, we went to our work with clean hands, at least. Steel-pens were not then in use; and he taught us to trim our goose-quill, to regulate its nib to large hand and small, how to prevent its tricks of spattering and blotting, exactly how far to dip it in the ink, and how carefully to lay it aside, well wiped, for another day. He had no arbitrary method of holding the pen, as if all hands, and the length and action of all fingers, were alike, but simply showed us what we had to do, and left to the natural action of the hand to find its most easy command of the pen.

The paper ruled in pencil, we began our first lesson—to draw a straight line, with a firm, decided hand: first, the distance between two, then three, and four ruled lines;

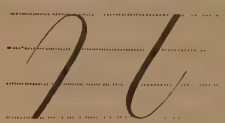


observing to press the pen at top and bottom, so as to expand the nib, and produce the proper degree of angularity in the terminations; holding it with even pressure, to maintain an equal width throughout the line. It was a difficult, and seemed almost a hopeless effort, at first; but after a page or two, carefully practised, there was not a boy in school who could not do it—and well. Then the lines were gradually extended to eight spaces. We had not reached the end of this lesson, before each one assumed, unconsciously, an easy manner of holding the pen; for, as the lines were to be continued without stopping, or removing the pen from the paper, the whole hand and wrist were necessarily brought into action; and a habit, almost universal with beginners, of writing by the action of the fingers alone, was at once corrected.

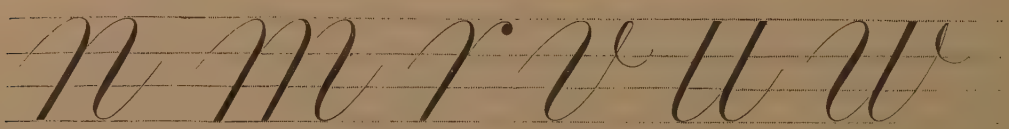




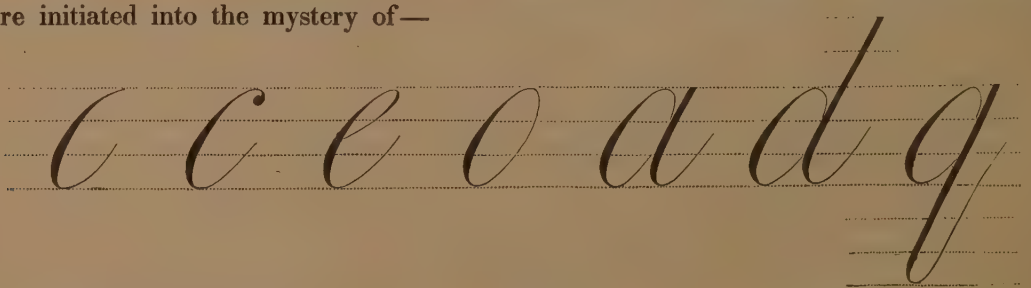
Next came the curves, and the nature of their form and delineation was explained: the gradual expansion of the line, as it approached and receded from the middle space, in which it became a straight line; the easy flow of the curve at top and bottom, and its exact repetition. He would examine, with a critical eye, our failures, show us every minute defect, equally dilate upon the slightest approach to success, and cheer, with words of encouragement, the most awkward.



We were now practised in the combinations; then a perfect letter was achieved; and, soon, such *ms* and *ns* were made as never before had been seen upon our writing-bench.

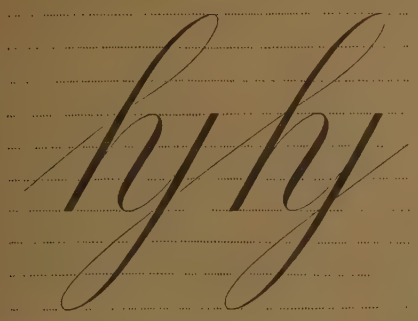


Something had been done; and we were indulged with a page or two of practice, before we were initiated into the mystery of—

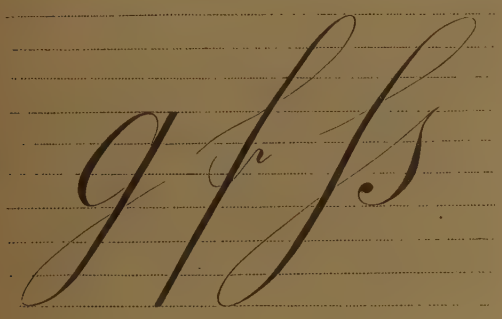


At the first trial of the tail of a *g*, a serious difficulty was encountered, especially by those who had not divested themselves of the old habit of dependence on the motion of the fingers alone:

for, now the whole hand, wrist, and arm, were brought into action; but two or three copies,

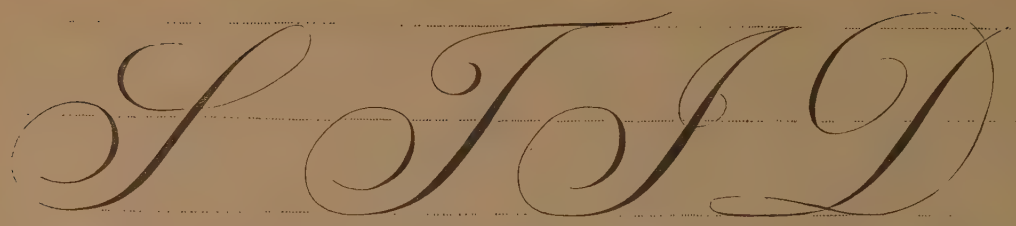
thus  , practised with care, and under his critical direction,

soon enabled us, in a great measure, to surmount it; and then we were well prepared

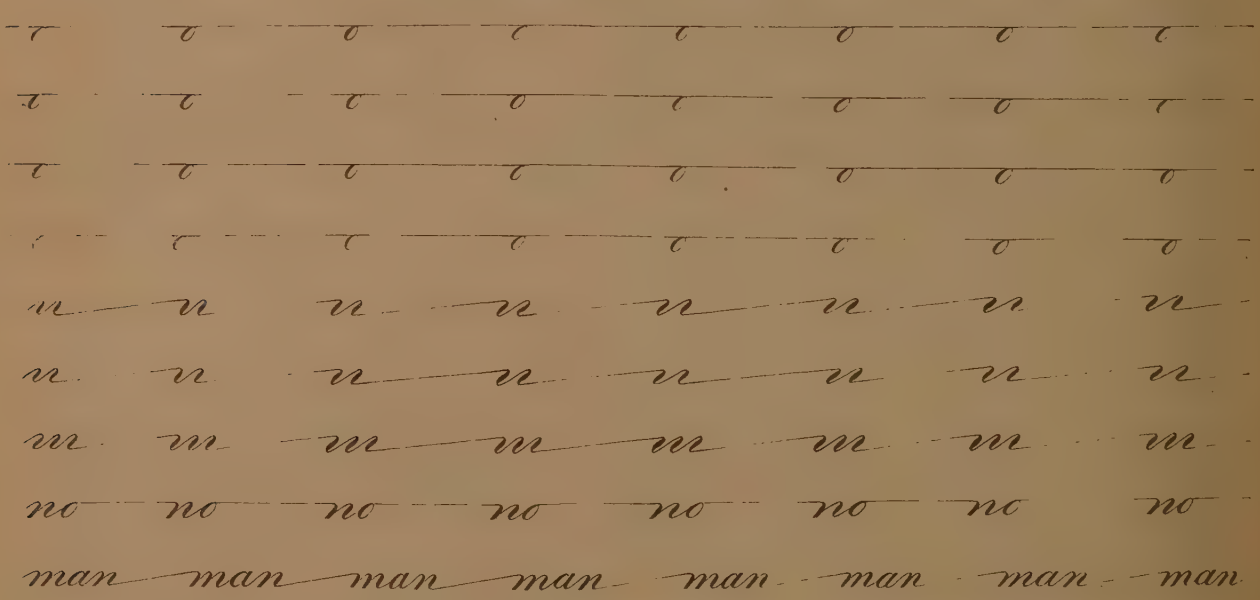
for  , etc. Every letter was to be formed with a slow,

steady movement of the hand; its peculiarity of form to be studied, as well as the application of portions of each letter to the formation of others. We were taught, first, to know how each letter should be made; and then practised to make it, by beginning with its parts, and combining them into a whole. From the most simple, we were gradually advanced to the most difficult. Nothing was passed over, or slighted; and when the small alphabet was mastered, we were considered prepared for capitals and small hand.

The instructions we received, with regard to the formation of capital letters, were strictly drawing them. Every line and curve was to be studied, and their application and combination understood, and practically exemplified, upon like principles.

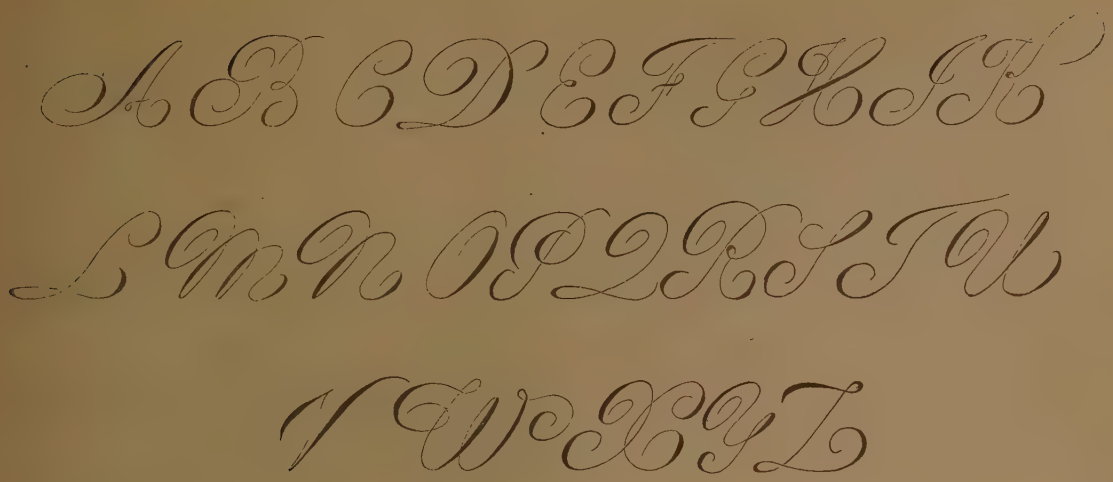


The ruled paper was now laid aside, and we began our lessons in small-hand. I well remember the feeling of helplessness with which I regarded the fair, unruled sheet before me—like a child standing alone, for the first time, and venturing on its first step. The trial came—it was to draw right lines across the page, without guide or ruler; a hard task, that few were equal to, but still we did wonders. From straight lines we progressed to the connexion of letters; and



thence, to simple words and sentences, not only written in a straight and even line, across the page, but repeated others, equidistant from each other, with a degree of ease and accuracy that would have done no discredit to older hands. If the men, who were then boys, now require ruled paper, or write in random, wandering lines, it has been the fault of after-years.

Another most admirable method, of exercising the hand, should not be forgotten. It was, to practise the drawing of the letters backward; by which the faint lines were necessarily reversed. We had often seen such letters and copies, in our "copper-plates," but never imagined they were to be done by any other method than by "painting them up."



Then, again, we were made to draw the letters with a single faint line; a practice well calculated to give ease and delicacy of touch, as well as certainty of hand: for he who depends upon the nib of his pen as a rest, will never be able to obtain command of it, or write, or draw, with ease and freedom.

Long after our writing-master had left us, and the fruits of his instruction were ripened, under the care of others, such continued to be sportive, as well as profitable exercises among us, on the slate and blackboard: and more than one complaint came against us, for our chalk-and-charcoal illustrations on the neighboring fences. Had there been, then and there, one to give a proper direction to this impulse, thus awakened by the instruction of our writing-master, to design, more than one would now hold his memory in grateful recollection.

Such a system of instruction develops the art of writing; and such is the art of writing, in its relation to the art of drawing. The teacher, or pupil, who can, with his pen, produce the most simple curve, and repeat it at pleasure, can draw. If he can not draw, the *art* of writing is to him a mystery as hidden. Let not the teacher, therefore, who undertakes to instruct in writing, say, "I can not draw." The time will come, when he will blush as soon, to own a want of capacity in one art as the other.

111. In schools, where a teacher of drawing is not employed, and even where there is one, the improvement of scholars, in both writing and drawing, may be promoted, in a very great degree, and with little or no additional labor to the teacher, by taking one half, or even two thirds of the time, usually devoted to writing, and applying it to drawing. The result will be found in no way to impede the improvement of the writing-classes; but, on the contrary, greatly facilitate

their advancement in that branch of education.* The copy-books, accessory to this work, will here be found of much use: for, by their aid, any teacher can induct his pupils in the knowledge and application of the first principles of drawing. He should require his scholars to practise each lesson with care and attention, and to become familiar, and, to a certain degree, perfect, in each, progressively; and the beginning once made, there is no fear that either he, or they, will have cause to regret the effort, or fail to prosecute the study farther. According to the advancement of his pupils, will he be able to judge of their capacity for higher attempts. In learning to draw, as in the acquirement of every other branch of education, the first steps are often the most important; and care, in the outset, may save much disappointment, and insure success. The method of instruction advised for schools, is equally applicable to home-education, or to those whose more mature years and judgment qualify them, in a measure, to become their own teachers.

112. The study of art is, in itself, so pleasing, that but little more is required of teachers than the initiation of pupils in its rudiments, upon such sound principles that they may continue its pursuit, aided only by observation, reference to nature, and good productions of art, and such standard works on the subject, as their wants may require. They will find, even before they have mastered the very first rudiments, and in their very first attempts to draw from nature, the absolute necessity of a knowledge of the first principles of perspective; and, if in earnest in the business, they will not fail at once to seek such knowledge: and it will be far better for them to supply the want when its necessity is felt, than if they were to undertake its attainment in advance. Again: when they attempt to draw the figure, they will be made sensible of the importance of a certain degree of knowledge of its anatomical structure; and thus, at every step, no matter how far they may extend the pursuit, they will feel, for ever, progressive wants, which must be progressively supplied. For all, however, there must be a secure groundwork; and that is a knowledge of the first principles of the imitative art. Once initiated, and made to feel the capacity of art, and the power they possess, its cultivation will not be a task, but constant and increasing delight. This must be done by small beginnings, by securing success, by not attempting too much, by a knowledge and capacity of its application to practical results, gradually acquired—

* The author has the gratification of finding this fact fully corroborated by the experience of an eminent teacher of New York, the Rev. W. Morris, rector of Trinity school, who, from actual experiment, has placed the matter in a light that can not fail to interest both parents and teachers. He divided his writing-class, without regard to any superior natural talent, or aptness, in his scholars, and allowed "one half the class to write every day in the week, as boys usually do in school, and the other half wrote and drew on alternate days. The result produced an average of five to one good writers, in favor of the drawing-class." A similar experiment any teacher can make, and it is well worth the serious attention of all.

a better and surer system of rapid instruction than any other that can be devised. One simple straight, or curved line, drawn with accuracy, and the beginning is made; and a habit of observation of forms, and their imitation, is induced, which gradually leads from small to greater efforts. Wants are felt at every step; and their supply is naturally sought by like means that have given strength to reach the point already attained. The eye, the mind, and hand, keep pace with each other, in the march of improvement; and the increase of knowledge and capacity impels to higher attainments and insures results, which never can be reached by a course of superficial instruction, having only for its object the production of a drawing or picture—the joint labor of master and scholar—of which the former has, too often, far more than his share.

113. What can a pupil have learned, to advantage, who can do nothing without his drawing-master by his side? And to what useful purpose can the little knowledge he may have thus acquired, in his lessons, be applied in after-life? It has been by such systems of superficial instruction, that drawing has been abused, and reduced in its consideration as a useful art; and, to say the truth, it is useless enough, when thus perverted from its high and valuable purposes. Such systems are worse than useless: they are evils, which go far to retard the cultivation of true taste, not only in art itself, but all those refinements which centre in it; and the sooner a reformation in our schools is begun, the sooner will a more healthful influence be seen and felt in society. We are not to look solely to teachers, for a remedy of the evil: for, unfortunately in this, as in everything else, the market will be, necessarily, supplied according to the nature of the demand; and, unless parents and pupils can be made sensible of the importance of a proper system of instruction, and of the advantages to be derived therefrom, teachers battle against windmills, and will get for their pains the reward of the knight of La Mancha, in their most sincere and honest exertions. The work of reformation is no untried experiment. Abroad, the diffusion of judicious education in design, largely and freely distributed throughout all classes of society, has proved, not only how easily it can be done, but with what favorable results; and it is time an effort should be made in America, at least to keep pace with, if not to lead, in the march of the onward century in which we live. Surely, we will not admit the existence of national incapacity. From a land abounding with the beautiful; with genius, wealth, enterprise, and freedom, much may be expected, and much may be achieved: and should be, in this, as in all that tends to elevate its national character and importance.

114. Whatever the experience of the world may be, with regard to the necessity of coercion, and of forcing the youthful mind, by physical persecution, into the reception of knowledge, that

of art may safely claim to be an exception. All the powers of the earth can not force a love for art upon the mind, any more than they can "make the bird sing;" and without a love for it, its pursuit is hopeless. With some, the first impulses of their childhood have given evidence of its existence; with others, it has been developed by accidental associations, or other causes; and, with many, it has been buried for ever, for want of proper cultivation. Care should be taken, therefore, to temper the course of study, as far as possible, to the inclinations, as well as capacity, of the pupil; who, it often happens, when a difficult lesson is placed before him, or failure has been the result of his labor, either by attempting too much, or for want of proper preparatory knowledge, desires to try something less difficult—and he should be indulged: for it is far safer for him to retrace his steps, than advance too rapidly. If, in its application to other branches of education, the operation of such a system of instruction, so forcibly exemplified in the study of art, were more strongly impressed upon the minds of teachers; if the tree of knowledge were planted in more pleasant places, and the pathways to it divested of many of the thorns that lacerate the youthful mind and body, as both are driven forward, by which the learner is made, too often, to despise the end for which he labors, as heartily as the means of its attainment are hateful to him, blue-Monday would soon be stricken from the school-boy's calendar.

115. We know that, in the pursuit of art, if properly directed, there is an attendant enjoyment, constant and enduring, as boundless in its resources. We know that men have lived through almost a century of ardent devotion to it, and died still true to their first love; their lives presenting one continued, progressive attachment and devotion to its cultivation. If the world but knew the enjoyments of the devoted follower of art, they would be more eager to share them with him. To him—

"No rock is barren, and no wild is waste;
No shape uncouth, or savage, but in place,
Excites an interest, or assumes a grace.

* * * * *

The dome-crown'd city, or the cottage plain,
The rough cragg'd mountain, or tumultuous main;
The temple rich in trophied pride array'd,
Or mould'ring in the melancholy shade;
The spoils of tempest, or the wrecks of time,
The earth abundant, or the heaven sublime:
All, to the Painter, purest joys impart,
Delight his eye, and stimulate his Art."

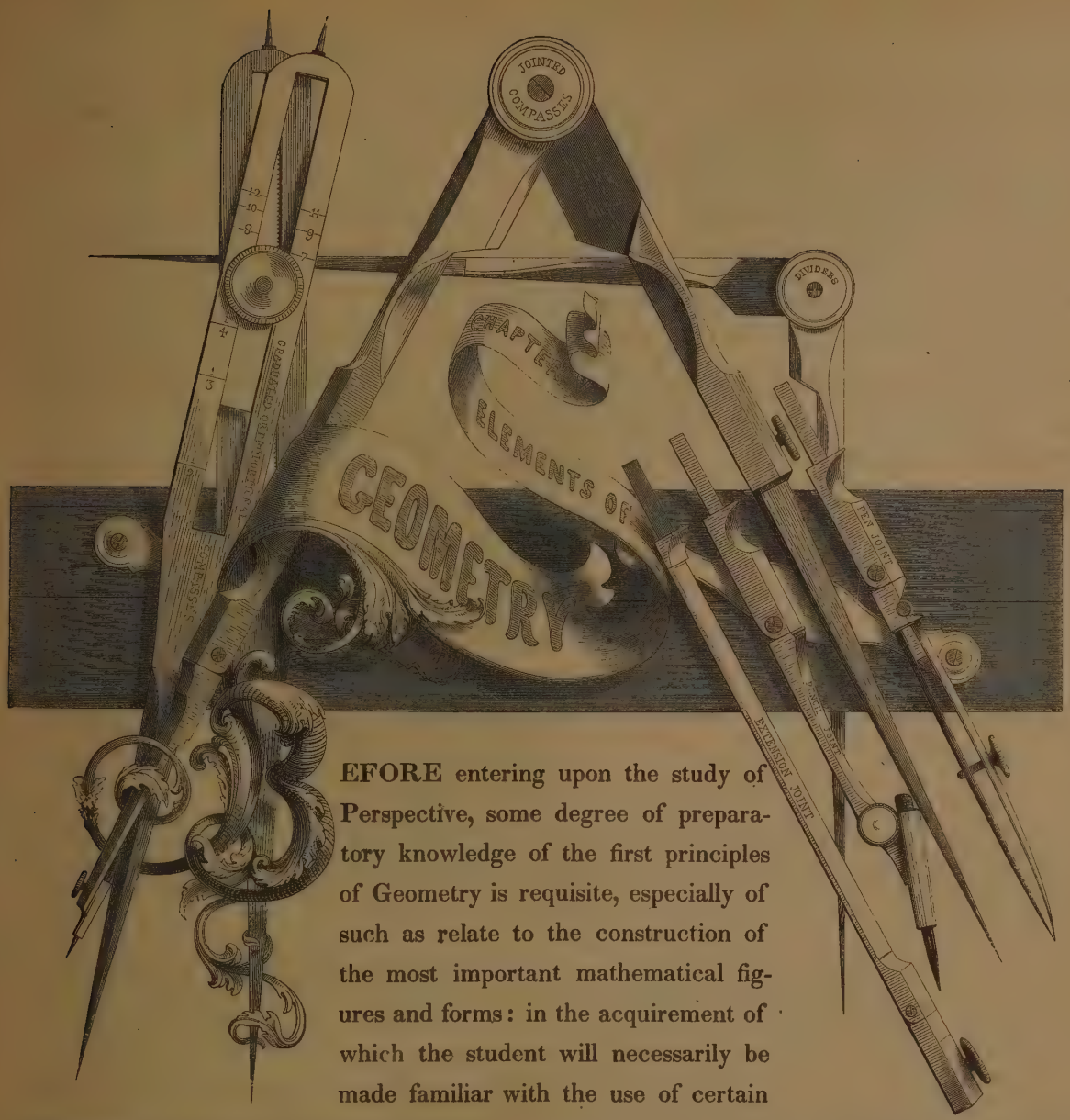
* * * * *

The most fruitful source of regret, and almost the only alloy to the enjoyments of the true artist, is the consciousness of want of power to reach that remote perfection, which ever recedes, as his strengthened perception capacitates him to follow it as his guiding-star: which shone as brightly, to the young imagination of Michael Angelo, and doubtless seemed nearer to him, in the days of his boyish efforts, than when, an old man, he sat musing, alone, among the ruins of the Coliseum, and replied to the Cardinal Farnese, who expressed surprise to find him there: "I yet go to school, that I may learn something." Then he had made his name famous throughout the world. Within sight, the towering dome of St. Peter's stood forth against the bright sky of his native Italy, the imperishable monument of his genius. The frescoes of the Sistine chapel, the wonder and admiration of that and succeeding ages, had been achieved. Almost at the close of a lengthened life, not unmixed with many trials and disappointments, still the love and devotion to his art burned as warm within him, as when, buoyant with youthful hope and energy, he left his parental home, at Caprese, to enter the school of Gherlandaio—to learn to draw. It was this that had sustained him, and made him what he was; and, it must be thus that excellence in art is to be wooed and won. It is this that must be cultivated, and kept alive for ever, in its pursuit: and it can be done—nay, more—even where its existence may appear to be doubtful, and almost hopeless, it may be developed by proper culture. It is an attribute bestowed on all, in degrees of capacity for its cultivation, as in all other gifts with which the Creator has endowed the perfection of his works, immortal man, and should, no more than they, be neglected.

116. In concluding the elementary portion of this work, it is hoped that the effort to place before the American public a popular system of instruction in the first principles of design, however incomplete it may be, may have a tendency, not only to awaken an interest in the subject, but to show, at the same time, how easy it is to learn to draw. Let those who desire to acquire this beau-

tiful and valuable art, but give proper attention to the principles and practice recommended, not by a few hasty trials, but by carefully following the routine of advancement, from a simple straight line, to the point now reached; and all that they have yet to do, will be both plain and easily acquired. As a primary and elementary work on drawing, our task is done; and it will not be in vain, should it reach, in a degree, however small, the wants of a people always susceptible of conviction, and ready to promote the advancement of the arts of refinement. The art of drawing claims more than this: for it is essential as a part of common education. It belongs to the artisan, even more than those who live in the easy enjoyment of fortune: with the one, it may be classed as a luxury, or source of recreation; to the other, it is a necessity.

Let this useful and beautiful art, therefore, no longer be considered as a mystery, confined to a gifted few, but take its place with its sister arts, in our systems of general education. The young and tender capacity is early prepared for it; its first impulses are harmonious with it; and, while it may be made to shed gladness and sunshine upon the hours of coercion to the school-bench; when the mind is for ever wandering from the primer to the bright fields, and scenes, and objects, of childhood's joys, its pursuit leads not from, but in the direction of, all other knowledge, assists in its acquirement, tends to strengthen the mind, and purify the taste, and bestows a capacity for intellectual pleasure, apart from its practical utility, that should give it place among the first requisites in common, as well as finished education.



BEFORE entering upon the study of Perspective, some degree of preparatory knowledge of the first principles of Geometry is requisite, especially of such as relate to the construction of the most important mathematical figures and forms: in the acquirement of which the student will necessarily be made familiar with the use of certain instruments, which will be found greatly to facilitate his practical operations, and, to which, although it may not be absolutely necessary to have constant recourse, still, the surest way of learning to do without them, is first to acquire a practical knowledge of their use and value. Although, all the rules and principles of Perspective are, in truth, based upon and connected with Geometry, it will be sufficient that the artist and off-hand draughtsman should understand so much of that science as may be immediately connected with his art, without entering into the more laborious investigation of causes and effects, however interesting and productive of mental strength may be its further pursuit. It will, therefore, be only necessary to present a short chapter on this

subject preliminary to the study of Perspective, for the benefit of those who may not have given previous attention to it. Apart from the intimate connexion which exists between the science of Geometry and that of Perspective, the student of the latter will reap great advantage, in the subsequent mathematical operations, which will be required of him to perform, in thus preparing his hand for that precision by which the principles of Perspective are most clearly developed, and made intelligible. Nor is its importance limited as an accessory to perspcctive alone, but extended to all branches and degrees of the arts of design—clearing obscurity from the way to truth, and storing the mind with reliable expedients in the attainment of its ends—increasing its creative strength, and adding to its power and readiness of communicating its impressions. This is the business of education in Design.

ELEMENTS OF GEOMETRY,

NECESSARY TO BE UNDERSTOOD, PREPARATORY TO THE STUDY OF PERSPECTIVE.

1. A POINT, as geometrically understood, has neither length nor breadth—parts nor magnitude—still it is necessary, in practical operations, that it should be definitely expressed—which is most generally done by a simple *dot* (.)—a slight puncture—and often by a simple intersection (× +).

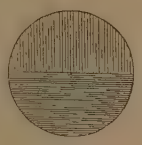
2. A LINE may be considered as an extension of a point, by which it acquires length, without breadth or thickness. There are two kinds—*Straight or Right Lines*—and *Crooked or Curved Lines.*

3. *A Straight*, or *Right Line*, is one which presents the most direct, and consequently, the shortest possible connexion between its extreme points . . ———————

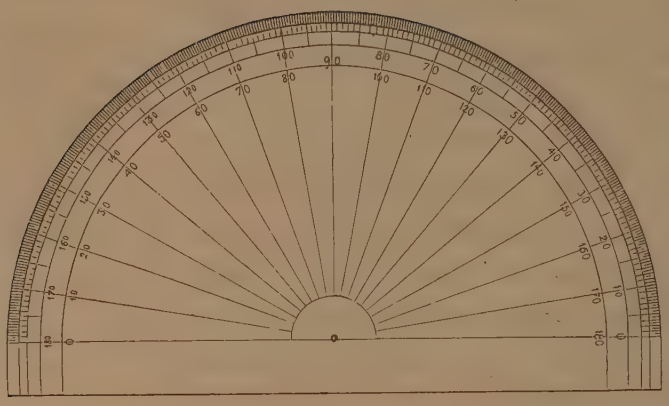
4. *A Curved Line* is one by which such connexion is indirectly attained

5. A CIRCLE is a form produced by a line, called its *Circumference*, sweeping around a point called its *Centre*, and always at equal distance from that centre. The *Circle* itself is too often confounded with its *Circumference*, whereas, the circle, geometrically considered, is the space limited by and embraced by the circumference. A fence may be as properly called a field as a circumference a circle.

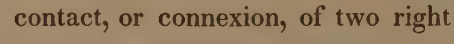
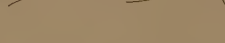
6. The *Radii*, or *Rays*, of a circle, are direct or right lines drawn from its centre to its circumference: *Radius*, from the Latin, meaning a *Ray*—*Radii*, *Rays*. A radius being equal to one half of a diameter of a circle, it is evident, as all the radii are of equal length, that every diameter must necessarily divide the circle into two equal parts:—and this forms the basis of one of the most important and useful applications of the circle to both practical geometry and Perspective—previous to entering upon an explanation of which it may be necessary to observe—If a right line be drawn from any one point of the circumference of a circle to another, without passing through its centre, it is called a *Chord:* and any portion of a circumference of a circle is called an *Arc* of such circle:—and, further, a right line connecting, or giving the measure between the extreme points, or terminations, of an arc, is the chord, or measure, of such arc—such chord, or measure, having reference to such portion of the whole circumference as such arc, and consequently its chord, may represent. This leads us to the requirement of an approved method of measurement of the circumference of a circle.



7. The circumference of the circle has been divided into 360 *Degrees*, or parts; and for purposes of still nicer calculation, each of these degrees has been subdivided into 60 *Minutes*—each minute into 60 *Seconds*, etc. If, therefore, we take 360 degrees, as the measure of the circumference of a circle, and divide it into four equal parts, each part must necessarily contain 90 degrees; and if two diameters be drawn connecting the points of these divisions, they will divide the circle into four equal parts. Now, when two lines meet or intersect each other, as in the case of these two diameters, they form a space between them which is called an *Angle*; the point of their contact or meeting (C) being called the *vertex* of the angle, and the chord of an arc described from the vertex, as a centre, drawn between the points where this arc touches, or cuts the lines forming the angle, will be the measure of such angle. Thus, for example, the chord (A B) of the arc (A D B) gives the measure of the angle (B C A) formed by the lines A C—B C. If, therefore, we divide a circle as above shown, into four equal parts by two diameters, they form at their central intersection *four* angles of 90 degrees each, which are called *Right angles*; half a right angle being, of course, 45 degrees. An angle which exceeds 90 degrees is termed an *Obtuse angle*, and that which is of less than 90 degrees an *Acute angle*.

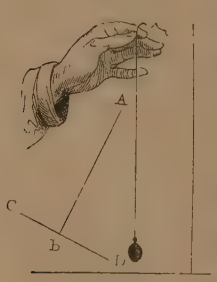


8. To facilitate the operations of the practical geometrician, an instrument for the ready measurement and adjustment of angles, called a ***Protractor***, will be found of much service. They are often made of brass, but still better, and far more serviceable for the draughtsman, of transparent horn; which enables the operator to adjust it to given points and lines with the utmost facility and accuracy, as well as to produce, or reproduce, angles of any given extent, or measure, at will. With regard to its application, and method of using, the annexed figure will sufficiently explain, as well as admirably exemplify, the principles involved.

9. Angles formed by the contact, or connexion, of two right lines  are called ***Rectilinear Angles***, and those formed by curved lines  ***Curvilinear Angles.***

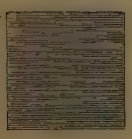
10. The Line of the Horizon is known as that which bounds the margin of the heavens to our view, best and most geometrically demonstrated by that which limits our view of the distant ocean; hence, a line lying in the same direction, and parallel to the natural horizon, is called a HORIZONTAL LINE.

11. The true VERTICAL, PLUMB, or PERPENDICULAR LINE, is such as is described by a body falling to the earth, or by a string to which a plummet or weight may be attached, and which must, necessarily, meet a horizontal line at right angles. Nevertheless, one line may be perpendicular to another, without being in itself a natural perpendicular, or vertical, but assuming that quality, from its relation to such other line. For example, A B is perpendicular to C D, although in itself not vertical, or perpendicular to the earth or natural horizon. These distinctions must be borne in mind in the study of perspective.

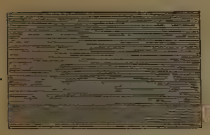


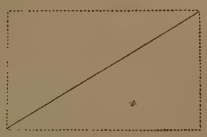
12. As lines are limited and defined by points, so are figures limited and defined by lines. No less than three straight lines can possibly embrace a figure. These are called TRIANGLES, having three sides and three angles. They are of three kinds: I. The *Equilateral triangle*, having its sides and angles equal to one another. II. The *Isosceles triangle*, having two equal sides and two equal angles. III. *Irregular triangles*, from their having their sides and angles irregular. To which is sometimes added the *rectangular triangle*, having one of its angles a right angle, although, strictly speaking, it belongs to the II. and III. classes.

13. A SQUARE is a figure having four equal sides and angles—all its angles being right angles. A line connecting its opposite angles, and dividing it into two equal parts, is called its *Diagonal.*

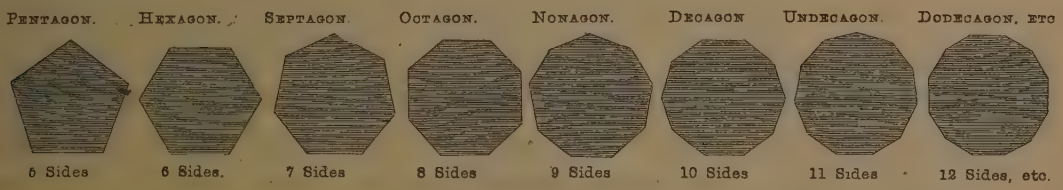


14. A RECTANGLE has its four angles, right angles, and its opposite sides, equal to one another, but unequal to the other two. Like the square, it is also divided into two equal parts by its diagonal. But, it should be remembered, that, in operative perspective, the diagonal of the rectangle possesses far different properties from the diagonal of the square, as will be hereafter more fully explained.

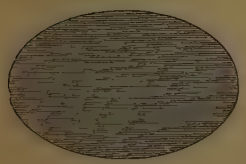


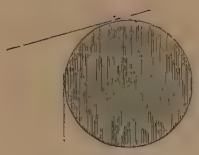


15. All figures formed by angles come under the general denomination of POLYGONS, and those of more regular and balanced proportions are designated as follows:—

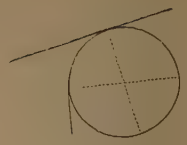


16. AN ELLIPSE is formed by a curved line embracing a space which differs from the circle in the inequality of its diameters. It is commonly called an *Oval*, from its assumed resemblance to the form of an egg; which, however, differs from the true geometrical ellipse—being smaller at one end than at the other, and also in having its extreme breadth not in the middle; while the true ellipse is equally balanced in all its duplicate and relative proportions



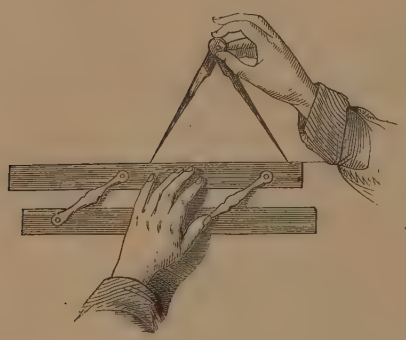


17. A TANGENT is a line touching the circumference of a circle at a point, called its *point of contact*, where it forms a right-angle with its diameter.

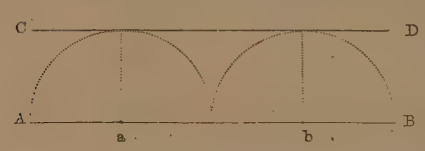


Properly to understand, and practically to apply, the rules and principles of perspective, it is important that the student should not only be able to form all these figures with mathematical precision, but also to comprehend the principles of their construction; in doing which, he may advantageously have recourse to a certain number of drawing instruments to facilitate his operations. On the initial page of this chapter will be found drawn the most generally useful of these instruments, and of the latest and most improved construction, although with an ordinary ruler, or straight-edge, and a pair of compasses, an expert hand may do very well.

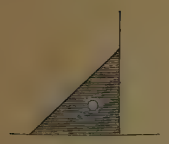
18. TO DRAW ONE LINE PARALLEL TO ANOTHER is most readily effected, at once, by the aid of the ordinary parallel ruler — an instrument which will always prove of service to the draughtsman, and the method of its application is so simple as to require no directions. It may be well, however, to observe, that where great accuracy is required in the adjustment of the parallel ruler, or any other ruler, or straight edge, to a given line, or to a given point or points, the aid of the compasses may be, in many cases, most serviceable. Thus, by placing the extended points of the instrument on the line, and bringing the ruler gently against them, as figured, the utmost certainty may be insured, provided the points of the instrument be well adjusted, which should be always the case.



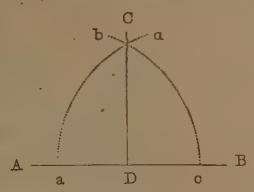
To draw one line parallel to another by a method more strictly geometrical — Open the compasses to the distance required between the lines, and from any point on the given line (A B), (say at a); describe as much of an arc as may be necessary; then select another point on the given line (say at b), and repeat a like arc. The tangent of these arcs will be the line (C D) required.



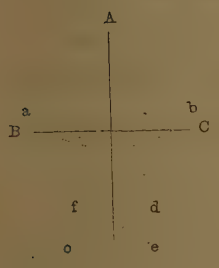
19. TO ELEVATE A PERPENDICULAR FROM A GIVEN POINT ON A GIVEN LINE. This may be done, at once, by the application of an ordinary rectangular triangle of wood, or even of card or paper, which will be found to be a useful accessory to the draughtsman for many purposes.



To do it, however, with the compasses, is, nevertheless, important to know. Suppose AB the given line, and D the point on which we desire to erect a perpendicular. From D measure off, with the compasses, two points (a——c) equidistant from D. Then, taking a and c as centres, describe as much of the arcs ad—cb as may be necessary to indicate their intersection; through which point a line drawn to D (as CD) will be the perpendicular required.

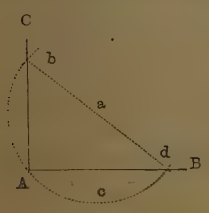


20. To DIVIDE A GIVEN LINE, BY ANOTHER, PERPENDICULAR TO IT, and of course cutting it at right-angles, is a process so similar to the foregoing, that it is only necessary to suggest the continuation of the arcs to a duplicate intersection, taking the extreme points of the given line as the centres for such arcs.

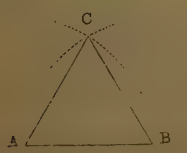


21. FROM A GIVEN POINT, TO DRAW A PERPENDICULAR TO A GIVEN LINE.—Let A be the given point, and BC the line to which it is desired to draw another from A perpendicular to it. From A, as a centre, describe an arc (ab), cutting BC in two points; then, from these points as centres, describe as much of the arcs cd—ef as may be required to secure the point of their intersection—whence a line drawn to the point A will give the perpendicular required.

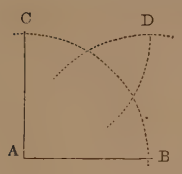
22. AT THE EXTREMITY OF A LINE, TO DRAW ANOTHER PERPENDICULAR TO IT.—Let AB be the given line, and A the extreme point on which we desire to erect a perpendicular. Place one point of the compasses on A, and extend the other to any convenient point (say a). Then, from a, as a centre, describe an arc (bcd), cutting AB. Draw the diameter dab: a line drawn from A, passing through the point b, will be the perpendicular required.



23. TO DRAW AN EQUILATERAL TRIANGLE.—Having (AB) the required measure of one of its sides, open the compasses to its extent, and, from its extreme points (A and B), as centres, describe as much of two arcs as may be requisite to secure the point of their intersection; from which point (C) lines drawn (to A and B) will give the required equilateral triangle.



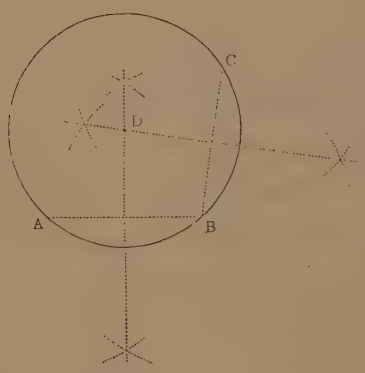
24. To DRAW A SQUARE.—Having decided the measure of one of its sides (A B), erect a perpendicular (A C) on one of its extreme points, as just shown, and placing one point of the compasses on A, extend the other to B. Make A C equal to A B, and then, without altering the expansion of the instrument, from B and C, as centres, describe as much of two arcs as will give their intersection (D): the four points—A B D C—connected, will give the required square.

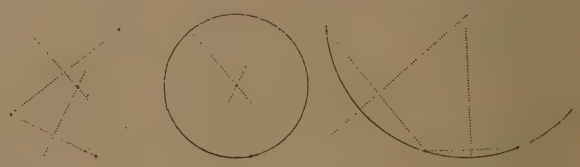


25. To DRAW A PARALLELOGRAM—the process is the same as for a square, with only this variation, that it is necessary to change the expansion of the compasses to the measure of the longer and shorter sides, in ascertaining the point D.

To DRAW A CIRCLE with the compasses needs no direction.

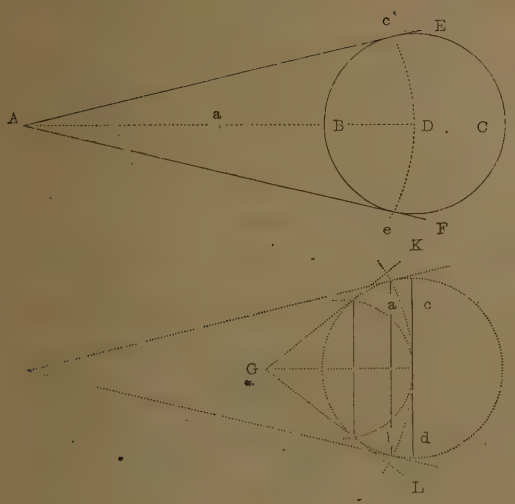
26. To FIND THE CENTRE OF A CIRCLE.—Take any three points (as A B C) on its circumference, no matter where, and draw the cords A B—B C; divide these cords by lines at right-angles, or perpendicular to them, as figured, and the point of intersection of these lines will give (D) the required centre of the circle. By a like process, it is evident that a circle, or arc, may be drawn whose circumference shall touch any three given points, as shown in concluding examples.





27. To DRAW A TANGENT TO A CIRCLE—might appear so simple as scarcely to require a rule; but cases frequently occur where it becomes necessary to ascertain, with the utmost precision, the *exact point of contact*, which may be thus verified: As there is no point in the circumference of a circle that may not limit a diameter, and a tangent must touch the circumference at right-angles to a diameter, a diameter, meeting a tangent at right-angles, gives its true point of contact. (17.)

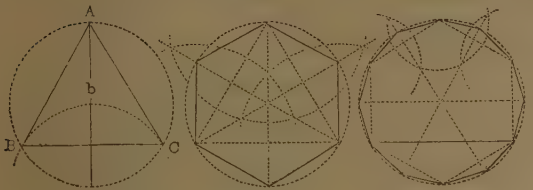
28. FROM A GIVEN POINT TO DRAW TWO TANGENTS TO A CIRCLE.—Let A be the given point, and B C the given circle. From A draw a straight line to D, the centre of the circle; divide the line A D

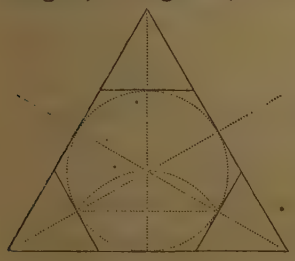


into two equal parts, at the point a; place the compasses on a, as a centre, and extending them to D, describe the arc cDe; and the points of intersection of this arc, with the circumference of the given circle, will give the true points of contact of the required tangents AE—AF.

It should be observed that the cord ab, which is the measure between the points of contact of the two tangents, is less than cd, the diameter of the circle; and the nearer the point, whence the two tangents are drawn, is placed with reference to the circle, the greater must necessarily be the difference between the measure of the cord giving the distance between the points of contact and the diameter of the circle, as shown in the tangents GK—GL, drawn from the point G, compared with former example.

29. To draw within a circle an equilateral triangle, hexagon, dodecagon, etc.—This operation consists in a simple division of the circumference of the given circle into *Three*, *Six*, and *Twelve* equal parts, etc. First, therefore, for the *Equilateral Triangle*, draw a diameter (Aa); then from a, as a centre, describe an arc (BbC), passing through the centre of the circle; and the points where this arc cuts the circumference of the given circle, at B and C, will give its required division into three equal parts, and ABC, the equilateral triangle required. *To trace a Hexagon*—the radius, or half-diameter, will give the true measure of the divisions of the circumference into six parts. *For a Dodecagon*, divide one or more, if necessary, of the ascertained sides of a hexagon, as figured, etc.

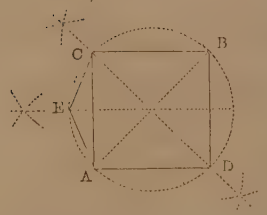




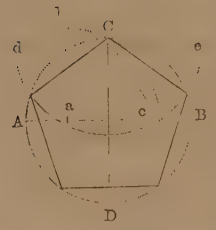
30. To draw either, or all of these figures, as well as such-like that follow, *outside of the circle*, the process is so similar that it will be only necessary to figure the *Equilateral Triangle* and *Hexagon* thus produced, and leave the student to exercise his ingenuity and practise his hand upon such others as he may have occasion to draw; in doing

which, it is advisable that he should draw them much larger than the examples here given, so that the slightest deviation from the utmost accuracy may be at once apparent. It is not enough that he should know how such figures may be drawn, but he should be able to produce them himself at will.

31. WITHIN A CIRCLE TO DRAW A SQUARE, OCTAGON, ETC.—First draw a diagonal (as A B); intersect it by another (C D) at right-angles to it, and the points, A B C D, will give the corners of the square required. ***For an Octagon***—divide one of the sides of the ascertained square (A C), as figured, and A E—E C will give the measures of the sides of the required octagon. It may be here observed, that one of the readiest ways of ascertaining the accuracy of a square or rectangle (14), is to measure its diagonals. If these are found to be unequal, neither the square nor rectangle can be correct.

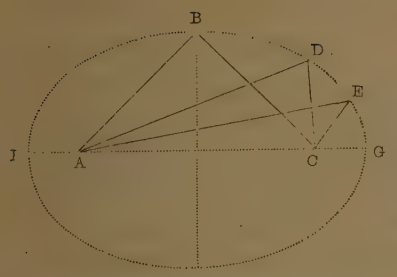


32. WITHIN A CIRCLE TO DRAW A PENTAGON, DECAGON, ETC.—First divide the circumference of the circle into four equal parts, as shown in the foregoing example, then take any one of the radii, or half-diameters of the circle, and divide it into two equal parts (as at the point a); on this point (a) place the compasses, and extending them to C, strike the arc b C c, cutting the diameter A B at c. Then, placing the compasses on the point C, extend them to the intersection (c), and describe the arc d c e. The points, where this arc cuts the circumference of the given circle, connected to C, as figured, will give two sides of the required pentagon; which ascertained, the remaining three sides are easily defined.

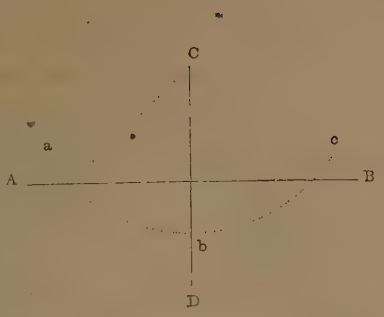


A pentagon, or even one of its sides, once obtained, the process of producing upon its basis a ***Decagon***, as shown in the second example, needs no further explanation.

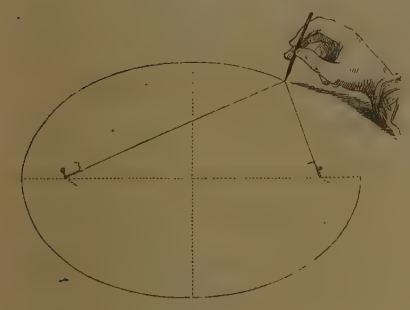
33. TO DRAW AN ELLIPSE with the compasses is extremely difficult, and the process, at best, is complicated, uncertain, and unsatisfactory; for, there are no portions of the line by which it is formed that exactly corresponds to a true arc of a circle. It has been found that there are two points on the longest diameter of an ellipse, equidistant from its extreme points, called its ***foci***, or ***focuses***, which, if connected by two lines meeting at the circumference, no matter to what point on the circumference they may be directed, the sum of these two lines is equal to the length, or



longest diameter of the ellipse. Thus (as first figured), AB—BC, AD—DC, and AE—EC, will be found severally equal to the diameter FG. To ascertain these important *points:* having first decided upon the length

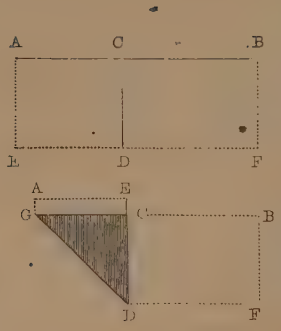


and breadth of the required ellipse, as AB—CD (in the second figure), and drawn these two diameters, bisecting each other at right-angles, take the measure of one half of the longest diameter (AB) with the compasses, and from the point C, as a centre, describe an arc (abc). The points where this arc cuts the diameter AB, will be those required. Now, by placing two pins in these points, and stretching a thread between them, passing over another pin at the point C, we have, as it were, a moveable line, equal to the length of AB, which will accurately guide a pencil in describing the required ellipse (as figured in the third example). Or, we may regulate the length of the string at once, by the required length of the ellipse, and, by doubling it, get the position of the required points on the long diameter, as well as making it serve in the after process. Ten minutes' practice will make the operation familiar to the draughtsman.



34. It should not be understood that the methods here given are to be considered so far arbitrary as to exclude others in common use, that may be equally as efficient, and the student will doubtless often have occasion to exercise his ingenuity in finding ready expedients, in the course of his practice, and in none more so than in supplying the place of instruments. It is well enough, when practicable, to have all such facilities; but it is equally well to know how to do without them, especially for the off-hand draughtsman, who can not always have his magazine of tools by him, and who often finds in a stout piece of paper all he absolutely needs for the spontaneous manufacture of such aids as he may require at the moment, and thus he sets to work.

35. First, for his *Straight-edge*, or *Ruler*. If he does not find the edge of his paper sufficiently accurate, he folds it neatly over, runs his thumb-nail along the crease to give it sharpness and firmness, and has, at once, not only the ruler he requires, but, by folding, refolding, and a little dexterous use of his penknife, soon learns the value of his expedients, and, in a measure, to do



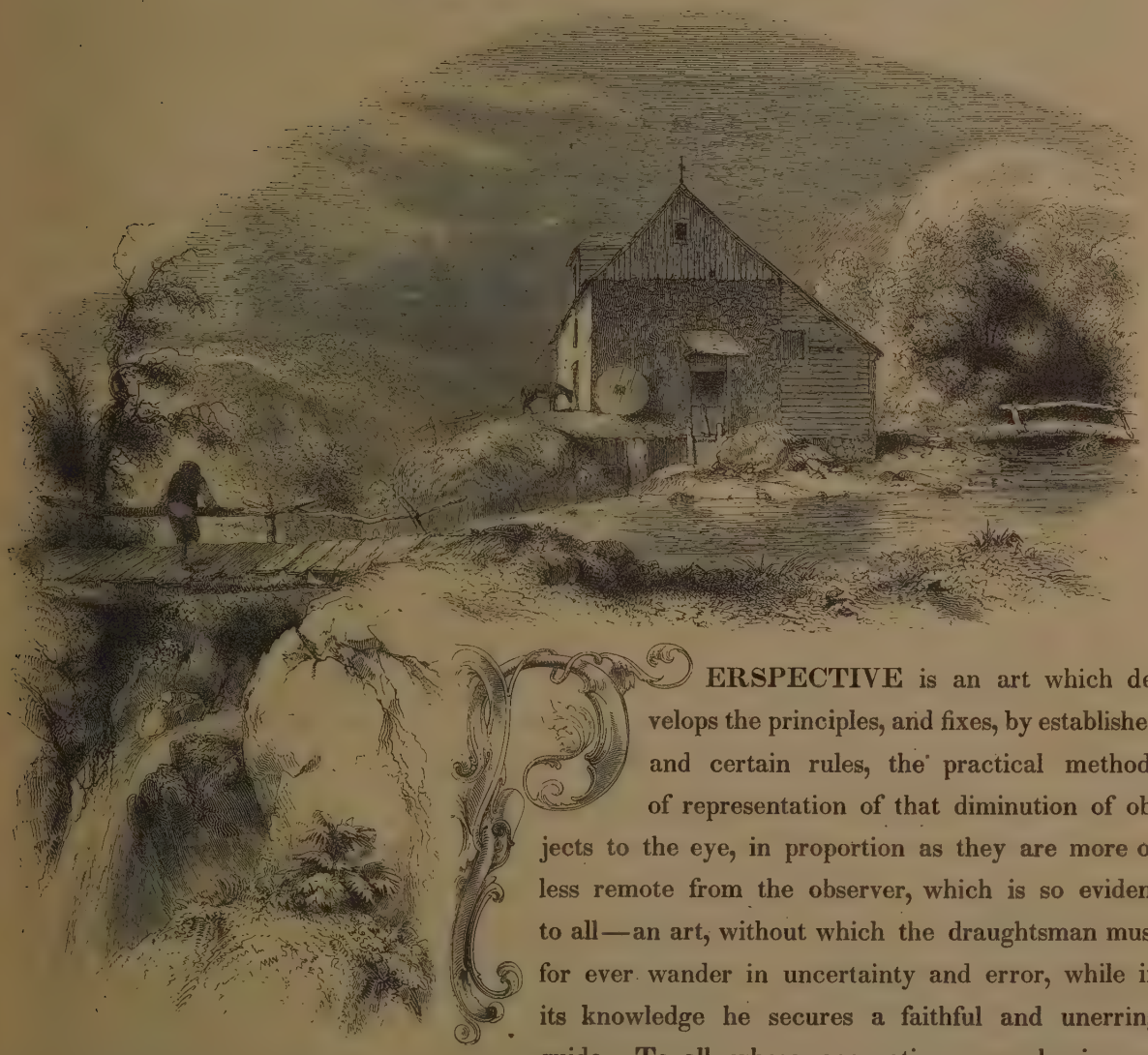
without his case of instruments. If, for instance, he requires a ***Square*** or ***Right-angle*** (19): Having secured his straight-edge, A B, he next folds his strip of paper neatly over, so as to double it evenly, and in the crease (C D) thus produced, he has a line (C D) perpendicular to A B, and consequently two right-angles (A C D—D C B). He now makes another fold in his paper, by bringing the edge (E D) evenly on to D C, by which he gets (in G C D) an accurate rectangular triangle—having one right-angle formed by the edges G C D, and two half right-angles formed by G D C and D G C; and with this simple piece of paper, almost every rule of practical perspective may be worked out. On its edges he may mark his measurements, and by its folds he can define his lines and angles, not, perhaps, so readily as with the scale and compasses, but still with sufficient accuracy for ordinary purposes.

36. Many a one who has been accustomed to rely entirely upon his instruments, has found himself in difficulty to draw a circle, or describe an arc, for want of his compasses, when a bit of thread would serve as well, and in many cases, especially when used on a picture, even better—where the finger may be made to serve instead of a drawing pin or point. For a like purpose, recourse may be had, also, to a slip of stout paper, or card, with this advantage, that it is less likely to stretch than the thread; and, moreover, when circles or arcs of different radii have to be often repeated, the holes (1, 2, 3, 4, 5, as figured) in which the pencil-point is to be inserted, render such repetition more easy.

After all, however, it must be admitted, that, to be capable of taking advantage of such expedients, the draughtsman should first know the methods of construction of geometrical forms by means of the instruments which experience has required and approved; and not merely for the facilities they afford, but the elucidation of the principles of construction which are thus made more clearly evident and impressive.

CHAPTER VI.

PERSPECTIVE—ITS PRINCIPLES, RULES, AND PRACTICAL APPLICATION.



PERSPECTIVE is an art which develops the principles, and fixes, by established and certain rules, the practical methods of representation of that diminution of objects to the eye, in proportion as they are more or less remote from the observer, which is so evident to all—an art, without which the draughtsman must for ever wander in uncertainty and error, while in its knowledge he secures a faithful and unerring guide. To all, whose occupations may be in any way connected with design, it is as important an auxiliary as to the artist it is indispensable. Apart from its importance in a practical view, its knowledge may justly be regarded as worthy of high consideration in the purposes of general education; for, surely, the design of education

should extend to all that tends to the elucidation and perception of truth. and that qualifies the senses for its faithful impression on the mind.

37. PERSPECTIVE may be considered as a Science and as an Art: as a science, in the investigation of the principles upon which is based its theory—as an art, in the mechanical or mathematical operations, by which we reach the truthful representation of any object or objects we desire, in any position or at any distance from the observer or from one another, at which such may be visible to the eye.

38. Perspective admits of yet another division, viz.: *Aerial* and *Linear*. Aerial perspective has reference, more particularly, to those peculiar atmospheric and other influences, by which objects, more or less remote, are affected in color, light, shadow, and gradation of tints, according to their distances or relative position; the rules for which are best acquired by close observation and study of nature, less reducible to systematic methods, and to the beginner of less practical importance, than linear perspective, a knowledge of which forms the best basis for its study. In its place we shall have occasion to refer to the subject of aerial perspective; our business, at present, with the art, is more directly as a linear operation. First, therefore, should the pupil learn to look at nature with an eye capable of the comprehension of the principles of the art therein so beautifully and clearly developed; and, next to the application of these principles to practical results, by which the representation may most nearly approximate to the truth of the reality. In all this there lies no mystery. The precepts and principles of the art are few and simple; although capable of endless elaboration and application, based in truth, they never vary from it. If the learner will go to the work in the same spirit which has been required of him in all that he has thus far acquired—when he can understandingly place a single *point* or *line* in perspective, with a perfect knowledge of the why-and-wherefore of the operation—he is safely in the way to pursue the more elaborate and various applications of the art with certainty, and the task may be thus overcome at the outset.

39. As preparation for the course that lies before us, let us consider the few technicalities that have been assigned to the art; for of these, few as they may be, more is required than mere familiarity with their names. If we dwell more on this subject than may be deemed necessary by those already familiar with the art, again let such be reminded, that our ambition reaches not to the teaching of the learned, but our highest aim is to make plain and simple the first steps of knowledge to the unlearned; and, reverting to our own experience, we are not ashamed to confess

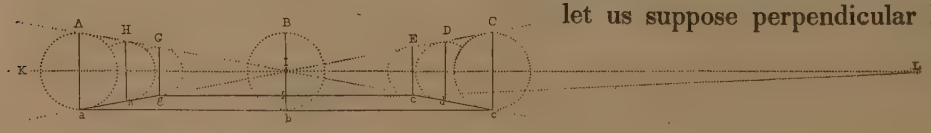
how long, tedious, and dark, were the labors of our beginning, through volumes of abstruse diagrams and mathematical operations, for want of clearer light and more practical exemplification at the outset. Nor have these deficiences, not to say errors of the books, been confined in their operation to our own experience, but generally confessed. "After having studied Perspective at Rome, under an excellent professor of mathematics, and after having filled more than five hundred pages, in folio, with drawings and figures in perspective," says Valenciennes, an eminent French artist, and author of one of the best works extant on the subject of Perspective, "I may have been allowed to have considered myself thoroughly proficient in that science. But, on my arrival in Paris, having shown my work to my friend Joseph Vernet (the celebrated landscape painter)—'I see very clearly,' said he, 'that you have learned perspective, but I also see as well that you do not understand it. Be not alarmed,' he continued, seeing my surprise; 'you know enough that I can explain it to you in a single lesson,' and this he did."—But back to ourselves, and let us not become involved in geometrical labors until we can comprehend the end to which they may conduct us. Let us look to nature for our first lessons, and evidences of the principles of the art, and then to the books to teach us the means of their practical application in our representations.

40. When the eye is directed to any view or scene in nature, it embraces no more than most agreeably fills its power of vision. This is *the picture* impressed on the mind through the organ of sight. It is the business of the art of perspective truthfully to represent this picture; and, even if it be an ideal creation, the rules and principles that govern its production are still the same. Now, as to the true form of this picture, it would most naturally be embraced by a circular limit, or frame, having, of course, its *centre* as its POINT OF SIGHT; and in

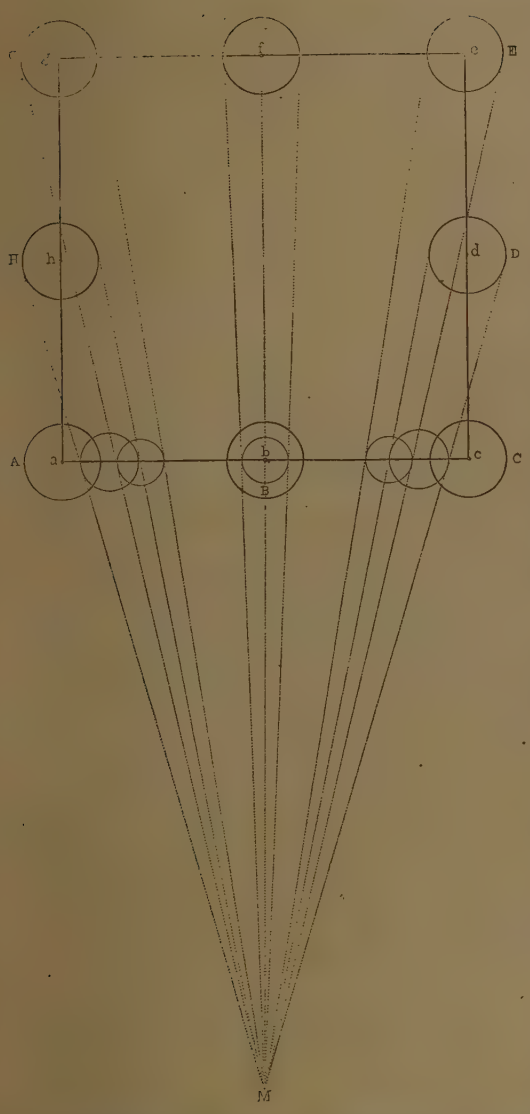
whatever direction the eye may be turned, this *circular* picture will be presented, its centre, or *point of sight*, naturally moving with it. But custom, and other considerations not necessary to dwell upon at this time, have given more generally acceptable forms to pictures, such as the *square*, the *parallelogram*, the *ellipse*, etc. Whatever be the form of the *artificial*, it must still be considered as but a portion of the *natural* picture, which distinction the examples just given will more fully explain. It is important that this distinction should be impressed upon the mind of the student of perspective; for, perspectively considered, ***the point of sight must in all cases be in the centre of the picture***, although it does not follow that it should be so in regard to such portion thereof as we may desire to embrace within the limit or frame to which we prescribe ourselves in our graphic representation. Still, however, this privilege which we assume should be kept within the limits of propriety; and we certainly exceed them when we carry our point of sight *out of the picture*, as we more closely approach them by placing it near its centre. To see a view or object, the eye must be directed to it: if so, its point of sight must be upon it; and Art must recognise the laws of Nature to harmonize with her in her impressions on the senses and thence to the mind.

41. Referring to the example on the next page—Let us suppose a square (a c e g) described upon a table, or board, placed in a perfectly level or horizontal position, and that eight balls of equal size (A B C D E F G H) be placed upon its four corners and divisions, as indicated—and let us, for the sake of elucidating the principles involved more clearly, imagine these balls to be transparent. If the eye were placed at a point, on a level with the centre of these balls (as at M), so that the centre (b) of the ball B would exactly cover the centre (f) of the ball F, as indicated by the line M b f, the several balls would appear in their relative positions and proportions compared with the three (A B C) nearest to the eye, as thus exemplified;

b being the *point of sight*, and b M the *distance of view*—the ball F being covered by the ball B, and only the balls A B C exhibiting their entire outline, or circumference—the imaginary line passing through their centres expressing the true and natural LINE OF THE HORIZON; that is, a line on a level with the eye of the observer, which must necessarily pass through the point of sight. Now, let us suppose perpendicular lines drawn through the centres of these balls, they will evidently give the points (a b c d e f g h)



which correspond, exactly to the corners and divisions of the original square in their true per-

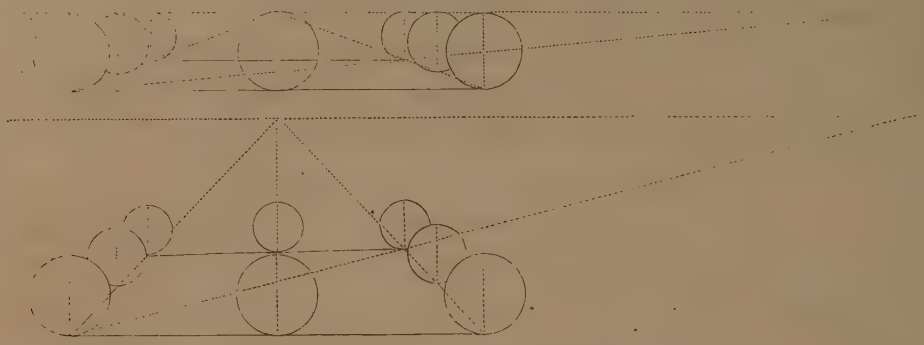


spective position; and consequently a c e g gives the true perspective representation of such square—the lines, or sides (c e—a g), terminating, if continued to an intersection of each other, in the centre of the ball B, as it appears in the perspective picture—which point corresponds to the point I, the *point of sight*, as just shown;—the sides (a c—e g) of the square being parallel with the line of the horizon (K). Hence it is evident, that—*All lines running parallel with an imaginary line drawn, from the eye of the observer to the point of sight, in the perspective picture, terminate in that point;* and farther *that—all lines at right-angles to such imaginary line must be parallel to the Line of the Horizon.*

Having now shown the truth of the perspective production of the original square, upon which we arranged these balls, as well as the diminution of the five balls D E F G H, compared with A B C, which we have represented of the size of the original scale—as resting on the front line of the square, which corresponds with the Base or Ground Line of the perspective picture. We are led at once, while these diagrams are before us, to the consideration of one of the most beautiful exemplifications of the accuracy of the art, and its application to practical results. If we extend the line of the horizon on either side of our perspective picture, and draw the diagonals of the square thus perspectively represented (as in second example), and farther continue the lines of such diagonals to their intersection with the line of the horizon, on either side of the point of sight, we will find the point of their intersection (L) with the line of the horizon, to be exactly distant from the point of sight—corresponding with the distance of the observer from the *base* or *ground line* of the picture; that is, that the distance from I to L (in the second example before us) corresponds exactly with the distance from M to b, as above shown in the representation of the actual position of the eye, as well as of the square and balls in question. The distance, therefore, between I and L, in the perspective picture, truly repre-

sents the DISTANCE OF THE PICTURE. Hereafter, when we measure off, or *point* our assumed *distance*, on the line of the horizon, the pupil must remember the basis upon which we do so. It would be a long, though an agreeable task, to enter into the mathematical operation by which the *diagonal* of the square, placed in perspective, thus verifies the point of distance with the line of the horizon and point of sight; and, working both ways—the surest test of all good rules—gives us the means, from the known data of the real point of sight and distance, to produce, not only an accurate perspective representation of the square, but, by its aid, any other point, line, or form.

42. If, without increasing our distance of view, we elevate the position of the eye so as to bring it on a level with the top of the eight balls, or even higher, and consequently the point of



sight and line of the horizon with it, no change occurs in the relative size of these balls as presented to the eye; the sides of the square lying parallel to the base line of the picture are still of the same length, the point of distance is unchanged, the line of the diagonal of the square still directs to it, and the lines of the other sides vanish in the point of sight, as before.

43. These important and elementary principles, therefore, may be considered as established—

I. The Point of Sight must be in the centre of the perspective picture.

II. All lines parallel to an imaginary line drawn from the eye of the observer to the Point of Sight, must terminate or vanish in that point.

III. The Line of the Horizon must necessarily rise or descend with the position of the eye, and consequently with the Point of Sight.

IV. The Base or Ground Line of the picture, and all others parallel with it, must be parallel with the Line of the Horizon.

V. The Diagonal of the Square, perspectively represented, directs to a point on the Line of the Horizon—the distance from which point to the Point of Sight represents the true Distance of the eye of the observer from the picture.

Upon these are based all the leading principles and practical operations of Perspective, in the perfect comprehension of which the pupil may consider himself fortified with all the mysteries of the art. So important may they be justly considered, both as regards the clear perception of their evidence in nature, and their practical application to art, that we return to them again; and in doing so, look again to nature for their illustration and verification.

44. Let us suppose an observer to sit at a prescribed distance from a window, and occupied in drawing the view without—which, as it suits our purpose better, we may imagine to be that of a street running directly from, or at right angles to the window. Observe that the eye is on a level with the first bar of the sash of the window: this bar, therefore, is equivalent to our *line of the horizon*; and the point on this line directly opposite to the eye is the *point of sight*—to which point the lines of the eaves of the houses, those of the street (supposing it to be level), and all others running parallel to them, or at right angles to the window, in the natural picture, are directed in their receding terminations (41); thus, assuming the frame of the window as that of our proposed picture or drawing, we have the first bar of the sash as our *line of the horizon*—the *point of sight* defined on that line—the distance from the eye to that point—the *distance of the picture*, etc. But the point of sight is not in the centre of the picture, embraced by the window-frame; still it must be the centre of the *perspective picture* (40), our picture or drawing being only a portion of the field of vision embraced by the eye.

45. This leads to the consideration of, if not a palpable error, at least an unwarrantable violation of perspective truth, too often committed by draughtsmen, and even by artists, whom we know not to commit such error for want of knowledge, but from sheer carelessness, or unnecessary sacrifice of truth, to gain certain ends, perhaps, in the composition of lines and masses, which might as well be obtained without such sacrifice. Thus we sometimes see the point of sight assumed on the very edge of the canvass, or border of the picture, and even entirely *out of the frame of the picture*. It must be evident to all, that the eye instinctively seeks a point to view a picture, whether it be in nature or art, under which it receives its most agreeable impression, and not only this, but where the delicately-constructed organ of sight may with least effort receive such impression. If, therefore, the eye must necessarily be directed to the picture, the point of sight can concentrate

nowhere else than within its frame somewhere, and as near its centre as possible, especially with reference to its horizontal breadth; for it is manifest that the farther we remove the point of sight from the centre of our picture, the farther do we lessen that harmony between nature and art which should ever exist. When we have exhausted all the power of art, there is enough left in which we fall short, without diminishing our resources by wilful and unnecessary perversion of truth. Would it not be absurd to imagine that any one desiring to look at a view through a window, should direct his sight anywhere else than within its frame? What right have we, therefore, to assume a larger liberty in our representations of nature?

46. With regard to the elevation and depression of the *point of sight*, and *line of the horizon*.

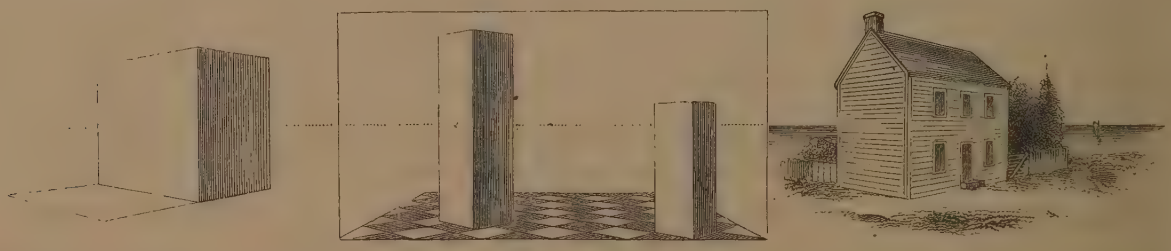
Let us imagine ourselves upon the seashore, our eye on a level with that of the first figure in the example before us. The line that limits our view of the ocean answers to our line of the horizon; it is on a level with our own eye, as well as his, and touches all other points or objects of the same height; we can not see the deck of the small fishing-boat ashore, and the hull of the distant ship rises above it. But, we climb the cliff, until we come on a level with the standing figure on the rock in shadow. The line of the horizon follows, as it were, our movement: we now see the deck of the small vessel ashore, and the round tops of the ship range with the horizon; one small vessel near the ship becomes more visible, and another, which was before hidden by the rock in shadow, is seen. We climb still higher, until we reach a point on a level with the highest figure in the examples; the line of the horizon ascends with us, and, on the smooth surface of the tranquil sea, we have, as it were, a vast perspective plain, defined by an actual line,

which is the line of the horizon—on which line must be our point of sight, corresponding, in our perspective picture, to our actual point of view, being directly facing, or opposite to it.

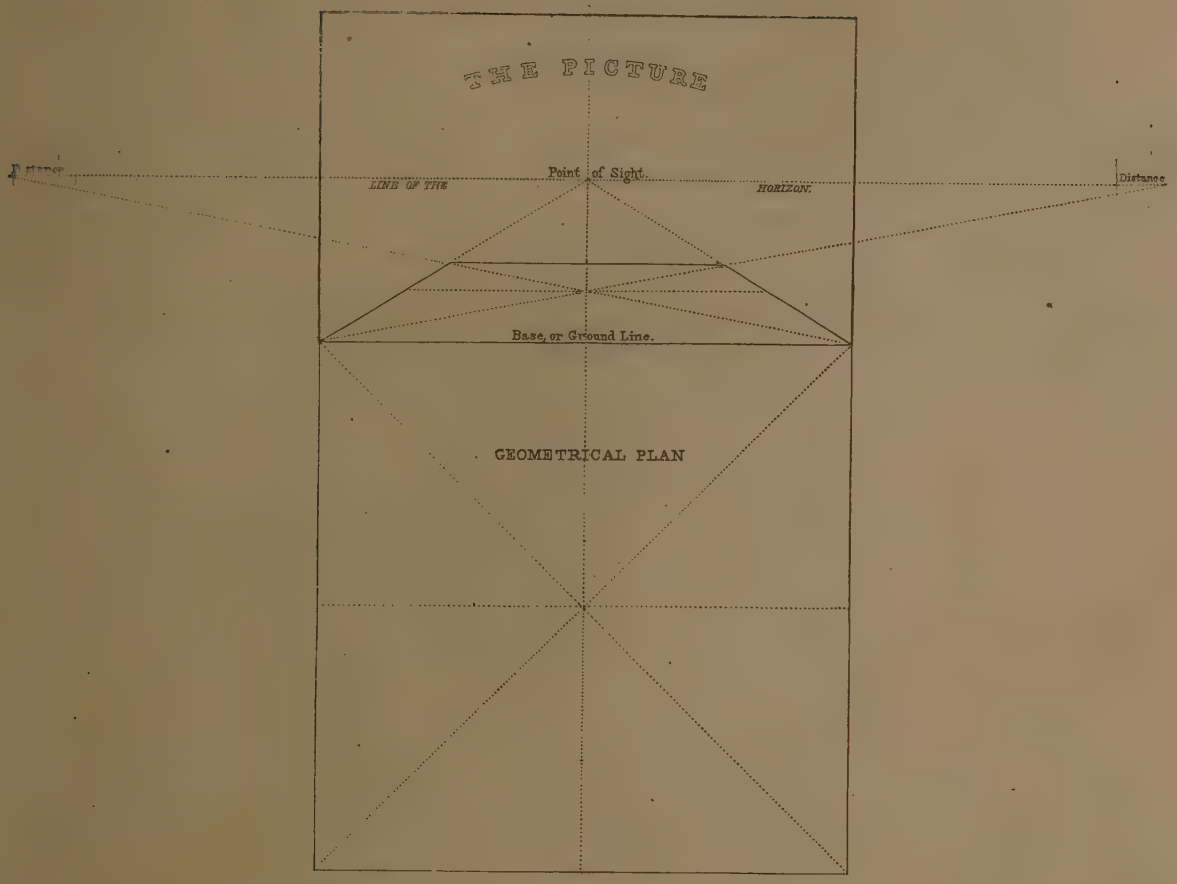
47. Let us suppose ourselves placed in a position to look directly up the centre of a long canal. and, for the sake of better exemplification, let us assume the circular, as the most natural form for our illustration (40). Our point of sight concentrates on that point which limits our utmost vision, and to it are directed all lines, in the scene before us, running parallel to an imaginary line drawn from our point of actual observation to the point of sight—such as those of the banks of the canal, the side of the house facing it, the wall on our left, etc.; while all level lines, which in nature are at right angles to this imaginary line, such as the weather-boarding of the gable end of the house, the roof of the shed, etc., necessarily are in the perspective picture parallel with the line of the horizon, and, if the frame of our picture were rectangular, would also be parallel to its base or ground line. We change our position, and stand immediately on the left bank of the canal, so as to bring its line as an actual perpendicular to the line of the horizon, preserving our extreme view up the canal as our *point of sight*, as at first. More of the front of the house now comes within the range of our vision, and the relative position of the various objects are perspectively changed, but not their proportions, as our distance is the same. As before, the same rules apply with reference to the lines terminating, or directed to the point of sight, and those running parallel with the line of the horizon, etc. Without moving our position, we *change our point of sight* from the extremity of the canal, by looking directly to the corner of the house, where now must concentrate our point of sight. This changes, of course, the imaginary and governing line from the eye to that point. We have not, now, perhaps, a single line in our picture which is either parallel, or at right angles to this imaginary line—not one, therefore, directing to, or concentrating in, the point of sight; and those that were before parallel with the horizon are so no longer—and, if not parallel to the line of the horizon, they must necessarily, if elongated or continued, come in contact

with it at some point, and at such point they must as necessarily meet, or form a vanishing point for all other lines that may, in nature, be parallel with them. Thus, as will be seen in the last example, the lines that before sought the point of sight as their vanishing point on the line of the horizon, do so no longer, but they must still concentrate, as before, at *some point* on the line of the horizon and harmonize together. While those that were before parallel to the line of the horizon, from their being in nature at right angles to the imaginary line from the eye of the observer to the point of sight, are so no longer, as this governing line has been changed; they therefore must be directed to and terminate in some point on the line of the horizon, harmonizing with their true position.

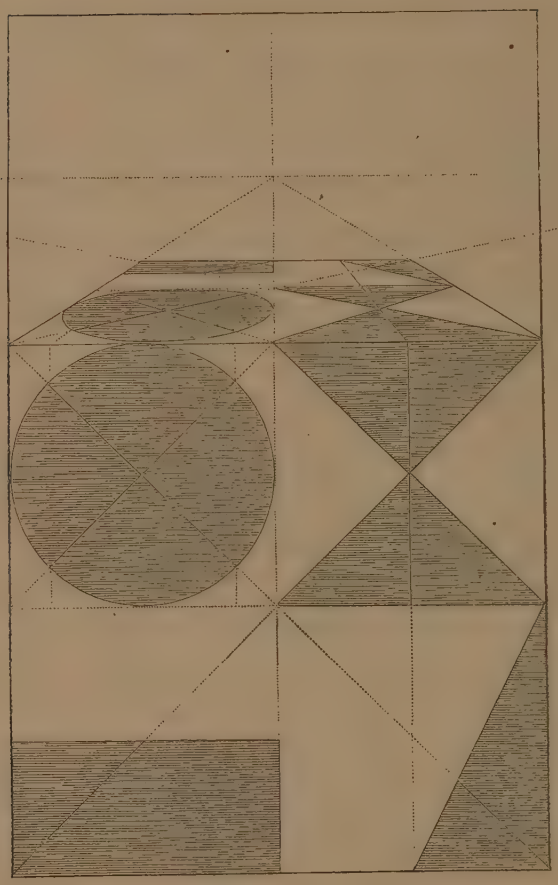
48. This brings us to a distinction recognised between *Parallel* and *Oblique Perspective*—a distinction which has nothing to do with the principles of the art beyond a classification of their results. The more the art, and its rules, can be simplified and generalized, the better. — As the eye recognises but one general rule in the diminution of objects, as they are more or less remote from it, so should it be in the art, which teaches the just linear representation of such effects in nature, and fortunately its rules of practical application are so simple and concise that the intelligence of their governing principles leaves no necessity for such classification, and consequently useless amplification. In the following examples are given instances of *oblique perspective.* As



it is evident, that, in one and the same picture, objects may be presented in every possible position, it is best to discard such classification in assuming a general principle for our operations, which will be found to serve in all the variety of position and circumstances under which nature may present itself, and art be required in pictorial representation. In the beginning we have endeavored to show a natural progress from points to lines, and from lines to forms, as the basis of design: thus we proceed in perspective. Having consumed as much space as our limits would allow in endeavoring to make plain to the student the first principles of the art, as developed in nature, and in showing their palpable evidences, therein so clearly and beautifully exemplified, let us now look to the means which it affords of their practical application to the purposes of design.



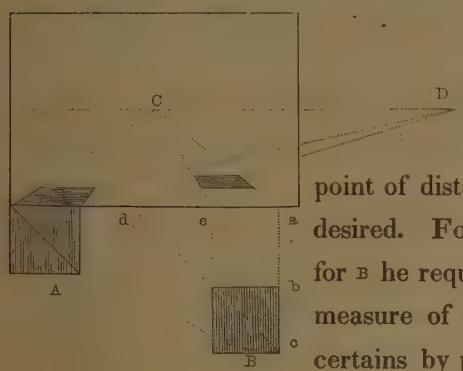
49. The square has been selected in our first lesson on the geometrical application of the art, as a form not only most intelligible, but at the same time valuable in consequence of the unerring verification of its diagonal with the *point of distance*, and for other considerations which will be made evident to the student as he progresses. Above we have the *geometrical* or *ground plan* of a square in connexion with its perspective representation or *perspective plan* in the picture, viewed under the governing circumstances of its *point of sight*, *line of the horizon*, *distance*, etc. It will be perceived at once that the square of the perspective picture in every way corresponds with that of the geometrical plan. Now, every one who essays to make a drawing or picture, can readily decide upon these points in advance—the *size of his picture*, the *line of the horizon*, and *point of sight*, and lastly the *distance* at which it is to be viewed, which distance it is necessary to have accurately defined, and here the *diagonal of the square* at once comes to his aid. Having drawn the lines of the two sides of the square, which vanish in the point of sight (as explained, 41)—one being already given in the base or ground line—the fourth alone remains to



be ascertained; in other words, having the lines of three sides of the square, he seeks by means of its diagonals to verify the position of the two points that remain to be established in harmony with the perspective circumstances of distance and elevation of the eye under which it is viewed. He therefore measures off on the line of the horizon, from the point of sight, the true distance, from which point a line drawn to the extreme points of the base line, representing the side of the square, lying, as it were, on the edge of the picture, and he has its diagonals, and consequently its fourth required side. And further, if he is able to produce the square of the geometrical plan thus accurately placed in perspective, he has the basis therein of any other form or figure, as above shown, observing, however, that there is a necessary reversion of the geometrical plan in its perspective reproduction. Before going further, it is desirable that the student should exercise himself in this simple and easy application of the geometrical plan of a square to the perspective picture; in doing which, the larger he makes his drawings the better, as error is thus more evident and accuracy more certainly attained — extending the points of distance, elevating and depressing the line of the

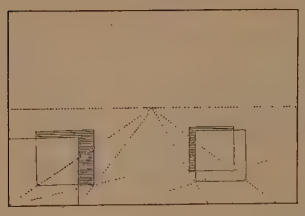
horizon, etc., closely observing and making himself familiar with the existing harmony between the geometrical and perspective square in all its details. Thus, having ascertained the four cardinal points, angles, or corners of the square in perspective, he finds, as in the geometrical square, the diagonals at their intersection give its centre; this found, he may divide it as readily as the real square into four equal rectangular divisions — again, into triangles, etc.; and thus, on the basis of such like divisions, points, and angles, he has the means of ascertaining the truthful representation of any form or object he may desire. It will be as easy for him in the end to draw a perspective as a geometrical plan, and with equal accuracy. After a perfect comprehension of the principles involved in the process, it will be no longer necessary for him, in all cases, to draw the entire ground plan of his perspective picture in his practical operations.

50. Suppose, for example, he desires to place two squares in perspective — the one (A) lying on the edge of his picture, and parallel to it — the other (B) at a distance from the base line, equal to a b, and also parallel to it. The assumed point of sight (C) secures the direction of two of the sides of each square, and the point of distance ($\frac{D}{2}$) giving the diagonals, leaves nothing more to be desired. For the square A he has to proceed as before shown; but for B he requires a diagonal equal to that of a square of which the measure of one of its sides should be equal to a c: this he readily ascertains by placing his compasses on the point a, and either striking an arc to its intersection with the base line, or simply making a d on the base line equal to a c — thus having (in a d — a c) two sides of a square of which d c would be the diagonal, a line drawn from D, the point of distance, gives this diagonal in perspective, and by its intersection with the lines C e — C a, the points which verify and represent the perspective view of the square B under all the circumstances it was desired to place it in the picture.

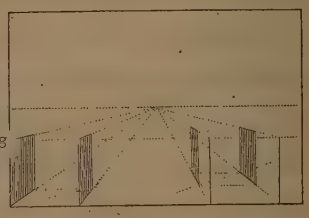


51. Having by this process ascertained the true perspective view of the two squares, always supposing them lying in a horizontal or level position — which for the sake of exemplification we may suppose to represent the bottom of a box, which, if its sides were all put together, would make a cube — it is evident that if two sides were added, corresponding in size to the squares already drawn, which may be said to represent the bottom of such a box, or base of a cube, and fitted thereto as shown on the following page — first on the sides lying parallel to the base line

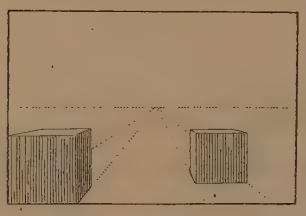
of the picture, and next against those at right angles to it—they would perspectively appear as



figured, the true measures assumed upon the base line of the picture, as indicated by the line g f, for the perpendicular sides and which may be made to serve as well for those lying horizontal, by their simple adaptation thereto.

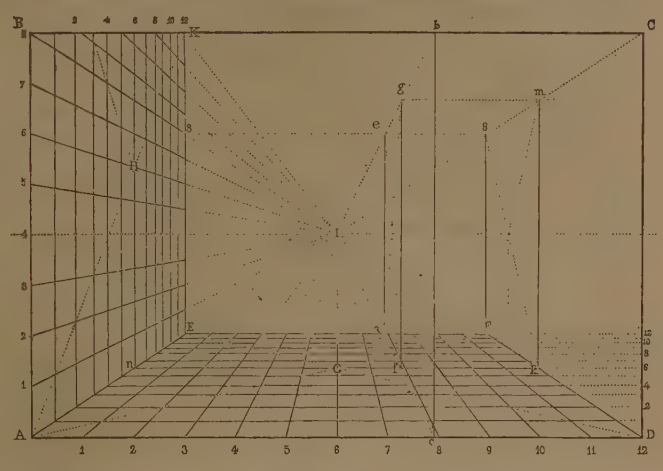


52. Let us presume this cube, or square box, to be exactly six feet high: it gives us, as it were, a scale, by the aid of which, and by an analogous operation, we can, upon the same principles, place any other object or figure, of any given height or size, on the perspective plan of our picture, with as much certainty as if it rested on the base line and represented its exact dimensions. The example of a figure, the height of the box, holding a pole, say fourteen feet high, will show the simplicity of the operation.



53. Once more it may be desirable to refer to the value of the *geometrical* or *ground plan*, not so much for the necessity of its use in general practice, as to insure a perfect comprehension of the principles of its connexion and harmony with its perspective representation. When these are properly understood, there exists no necessity for a ground plan in most cases, beyond its distinct impression on the mind. In the example on the next page, to which we now refer, assuming our picture (A B C D) to be of the proportion of *twelve* by *eight* parts, according to the scale which we intend our design to be, in reference to the true and natural size of the objects, we may call these parts the representations of feet. Having the size of our intended picture secured, we have next to decide upon the line of the horizon, points of sight and distance, and by the aid of these to produce a perspective square (A E F D) by the easy process already shown (49). A D representing one side of this square on the scale which the picture is assumed to be in reference to the natural size of the objects it is to represent, we next proceed to measure off on this line twelve parts; and first having drawn lines from each of these points of measurement to the point of sight (I), we next by the aid of the diagonals (D E—A F) get by their intersection with these lines the points which secure us the further division, with as perfect perspective certainty, of the sides D F—A E into twelve equal parts, as we have on A D and E F; and our

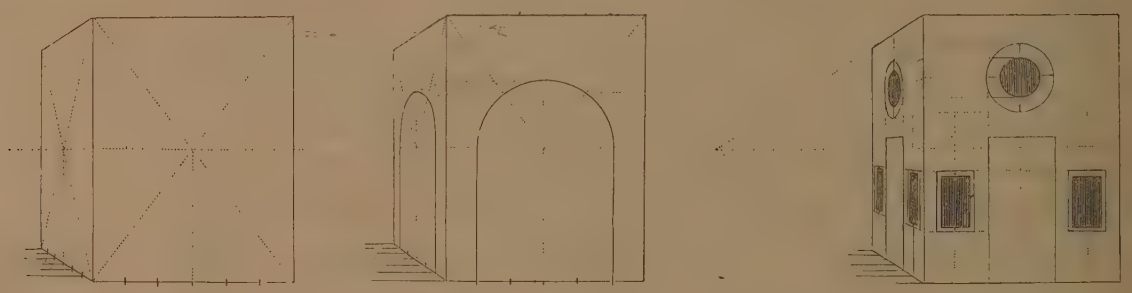
perspective plan as accurately divided into *one hundred and forty-four* squares, each perspectively representing a square foot, as we could have it thus divided and proportioned in a *geometrical plan.* The lines A E—D F, therefore, being in every respect perspectively equivalent to A D and E F, as well in their twelve equal divisions as in their whole length, vertical lines erected on the points marking these divisions, must necessarily correspond in their perspective proportions with the scale of the horizontal line on which they rest (51, 52). Thus, if we measure off eight parts on A B equal to the divisions on A D, we have on A B as accurate a scale for perpendicular lines and objects as we have on A D for those lying level or horizontal.



54. Let us suppose we desired to erect a perpendicular line on the line E F at the point a—which shall be eight parts (or feet) high. This we may do at once by drawing a line from the point of sight through the point a, and extending it to the base line (as I a c); on the point c erect a perpendicular (as c b), and on this perpendicular measure off eight parts, which in this instance the height of the picture gives us; then draw a line from b to the point of sight, and its intersection with a perpendicular drawn from a will give the line a e required. If this perpendicular falls, or be erected, on any point along the line E F, its length and proportions must be the same, and correspond to the proportions of E F in every respect. Should we desire to place this perpendicular on any part of the square (as f g), the process is precisely the same, as well as its verification; or a still shorter way may be adopted, based upon this process, by measuring the height of the perpendicular by the parts of the horizontal line on which it rests. Thus it will be found that f g is equal to eight parts taken on the line n f k, on which it rests; and a e is equal to eight parts of the line E a F, as the lines A B—c b—D C are severally equal to eight parts of A D or B C.

55. It must be remembered that, in the division and subdivision of all perspective forms or figures, they should be treated precisely as though they were drawn on a geometrical or ground plan. As A E F D truly represents an actual square, so do all its parts and proportions. All the

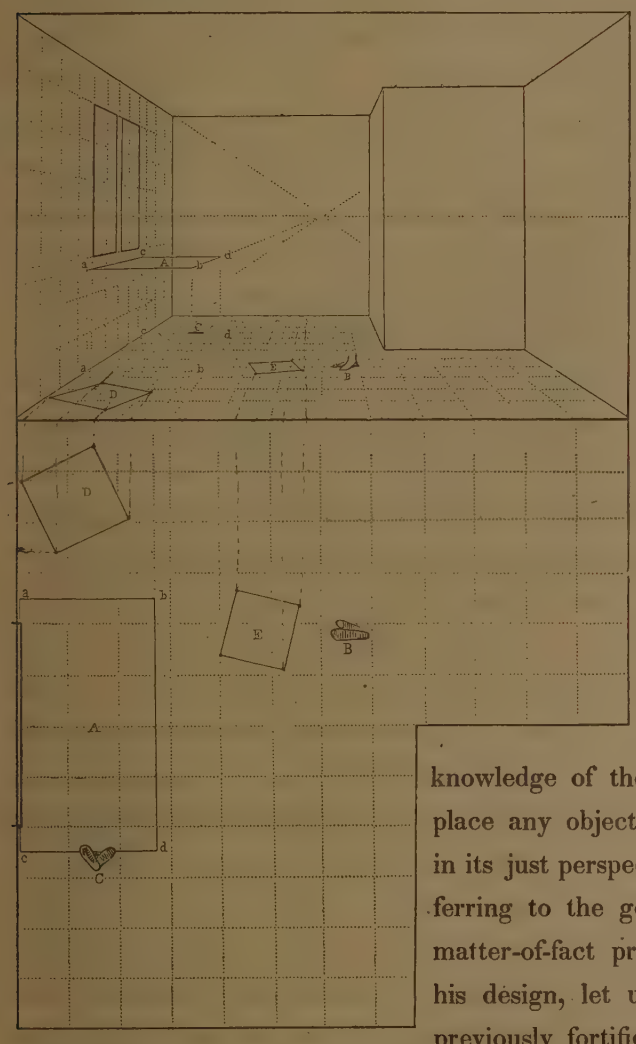
angles of its one hundred and forty-four divisions represent right angles, and all their sides are equal to one another: consequently, all their diagonals must be considered as intersecting each other at right angles, etc.; and, further, all less regular forms are thus equally effected. Let us take, for instance, the parallelogram formed by f k m g in the example we have just considered, as best suited to our purpose, and by repeating its front and side view, as perspectively seen under different modifications, exemplify the harmony of this operation, which is placed before the student for his study and practical exercise, preparatory to that which we have now to consider.



56. It may have appeared that the way of the beginning in the study of the art of perspective has been long, and as yet no practical results have been attained. We gladly, therefore, hasten to convince the student, who has carefully pursued the course thus far laid down, that he has secured, in the possession of a comprehension of its elementary and leading principles, a solid basis that leaves but little more than his own intelligence, practical observation, and application, to complete the work. The guide may now safely assume the part of companionship, and both may now reason together more understandingly. Having in view the design presented,

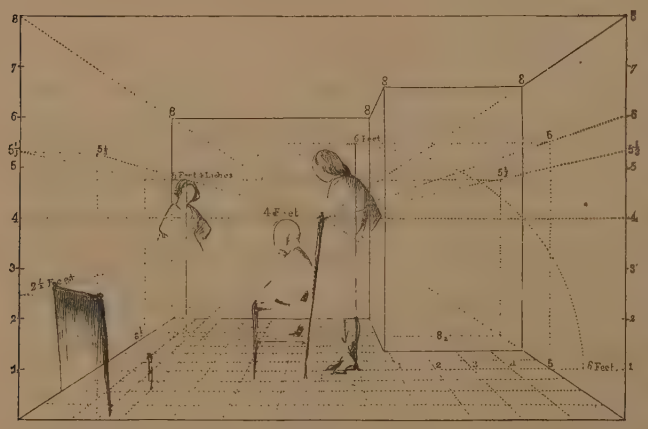
in connexion with the exemplifications which follow on the next page, it will be easy to show that every principle and rule of perspective involved in its production have already been explained and placed within the means of practical application. In reviewing the ground which we have passed over, we make ourselves more secure of its possession, and may recover something lost sight of or perchance neglected, the want of which we may sensibly require hereafter. Let us therefore do it carefully, for the profit will well repay the pains.

57. We have here the general perspective outline of an apartment corresponding with its geometrical or ground plan annexed, which has been produced precisely as that already presented and explained (53, 54, 55). We therefore know that its walls represent the height of eight feet; that its floor is twelve feet in depth, from the base line of the picture to its extremity; that it is of the same width until it reaches the distance of six feet, at which it becomes narrower by a little over four feet, which are taken from it by the projection of the doorway or entry. Every foot of its floor, which, for the sake of making the end to which we aim more clear, we may consider as tesselated in squares of a foot each. Every foot of this floor is therefore laid off as accurately in the perspective as in the geometrical plan—and thus, if desired, every inch of it might be as positively defined; and not only on the floor, but on the walls, ceiling, etc., in like manner. It would argue little for our progress, even thus far, in the acquirement of knowledge of the art, were we not able, upon such data, to place any object, we desired to introduce in this apartment, in its just perspective position and its right proportions. Referring to the geometrical plan rather to bear in mind the matter-of-fact premises assumed by the artist in making out his design, let us follow his practical movements. Having previously fortified himself with a general idea or impression of his subject, and perhaps with a memorandum or sketch before him, he has arranged the dimensions and general outline of the apartment, and marked off the various measurements and divisions which he will most likely have occasion to require. This he can do in chalk, charcoal, soft lead pencil, or some such substance, whose marks may be easily erased after their service has secured the end desired. As yet he has nothing but the tesselated floor and blank walls defined. The floor in its squares gives him as certain and well-defined a basis upon which to place the



figures and objects he may desire to introduce in his picture, as to place the men upon a chess-board. Whether the floor is tesselated or not, the same expedient equally serves; for after having fulfilled the service of their intention, all vestiges of these lines may be easily erased. In like manner as the floor, every portion of the interior of the apartment, the walls, ceiling, etc., may be thus laid off, if required—leaving the artist a freedom as unlimited as his design in placing the principal and accessory objects and details of the picture at once in their true perspective position. If, for instance, he should desire, as in the case before us, to place a window four feet square, whose sill shall be three feet from the floor, in the middle of the left-hand wall, the divisions already described thereon give him at once all the points he requires, which the example we have just had under consideration will sufficiently show, aided by what has been before explained (55). Immediately in front of this window he desires to place a table (A) five feet long and two feet eight inches broad and high: again the dimensions described on the wall and floor come as efficiently to his aid. To decide upon the points on which the figures (B—C) stand, will be found equally as easy; and even the position of the chairs (D—E), although presented obliquely, will occasion no insurmountable difficulty, especially after the careful study of that which will presently be offered on the subject. The position of the various objects and figures of the picture being thus accurately defined, their perpendicular measurements in reference to such perspective position alone remains to be ascertained.

58. To prevent entanglement of thought and operation by a multiplicity of lines, we avail ourselves of so much of the example, which we have under consideration, as may be required for our immediate purposes. Beginning with the principal standing figure, we find he stands just four feet from the base line of the picture. On the line of the floor, therefore, corresponding to four feet from the base line, we take the measure of six of its parts, representing feet, being the ordinary standard of a man's height, and making some little allowance for his stooping attitude, the perpendicular line drawn from his left heel, being equal to the six parts taken from the horizontal line on which he stands, gives us all that we require. This is perhaps the easiest and shortest method. In the instance of the figure of the girl standing behind the table, a similar course might



be pursued; but let us select another, as well to show the agreement in the results of the art, as further to discover to the student its resources. Having decided upon the position on the floor, or pavement, on which the figure may be supposed to stand, we connect it by a right line, from the point of sight, extending to the base line of the picture, on which, from the point of such connexion, we erect a perpendicular, which, by the original scale of proportions laid off, or assumed, upon the base line, we make equal to the real height of the figure (say five and a third parts, representing five feet, four inches), as if it stood upon that line. A line drawn from the height of this perpendicular of the base line to the point of sight, must necessarily give, by its meeting a perpendicular erected from the position on the floor, or perspective plane or plan, the just perspective height or measure of that figure in reference to its distance from the base line (51, etc.). Thus, by either this or other methods, based upon the elementary laws of the art, may we proceed throughout our picture; beginning with certainty, no matter where, and keeping all in harmony with that beginning throughout our progress; adapting the graphic representation to the instinctive impulses and requirements of that delicate sense by which the impressions of art are conveyed to the mind, so that in its perfect accordance with the habits of observation with which the eye most agreeably receives the impressions of nature, it meets an equal reception, acknowledged and unquestioned, as the reality. The sympathetic language of the thought makes it welcome and intelligible. Art accomplishes its ends, and acceptation rewards the artist.

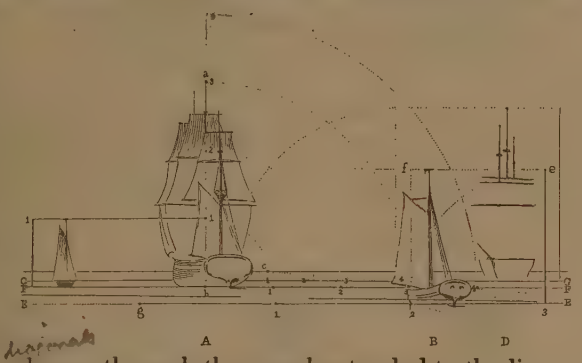
61. To some, even these operations, simple as they are, may prove embarrassing, and an inverse method more desirable, by first adapting the perspective operation to the principal figure, group, or motive of the picture, and thence proceeding to its details and accessories. This, it must be admitted, is the more artist-like, the other the more mechanical method of procedure. In both, however, will be found the utmost harmony of results, and in the principles of the art involved in their attainment, which, when once perfectly understood, the artist may set to work with more latitude in his methods of reaching his object of just representation. Instead of beginning with the perspective of the apartment, and other details, which perhaps it may be desirable to make subservient to the leading group or subject, to insure certain effects of light, shadow, color, or composition, and which it may be better to leave as an after-consideration—the artist makes his beginning with the principal group, by first deciding as to the space it shall fill on the field of the picture, leaving as yet unsettled the distance, horizon line, etc. Having sketched in the general idea of this commencement, he assumes its proportions to represent the standard or scale of all other details or objects he may desire to introduce in his composition: and drawing a

horizontal line through the point on which his leading figure stands, he takes the height of that figure (say six parts, or six feet), which, reduced to a scale on that line, gives all that he requires as a basis for after-operations. He must now decide upon the point of sight, which necessarily gives with it the line of the horizon, then the distance of the picture, etc. If he desires to tesselate the floor, for instance, lines drawn from the point of sight through the divisions on this horizontal line will repeat the scale as justly on the ground line and throughout the whole perspective plan of the picture as if he had begun as first suggested; the horizontal line first assumed, serving the practical purposes of a base line and with equal efficiency.

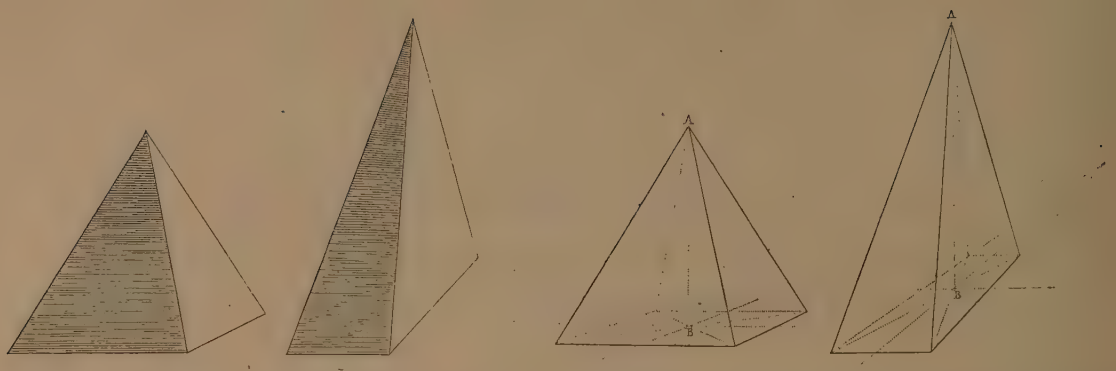
62. Again, as in the case of a view that it would be almost impracticable, if it were even necessary, to reduce to a measured perspective plan, we may select any one object which may be considered as a definite standard, and on such premises reduce all other objects and details into perfect perspective harmony, by means most simple and easy. In the case before us, it would be as difficult as unnecessary to draw a geometrical plan. It is easier to tesselate a pavement and define every inch of it than to tesselate the traceless ocean, and yet do objects floating on its calm or disturbed surface come as equally within the government of the laws of perspective. Here we have all our lines of operation and verification to assume, except our line of the horizon and point of sight. Whichever object we select as our standard, if it be the sloop (B) nearest to us, for instance, we take its full height by a perpendicular from its vane to a central point between the water lines which mark its floating position on the perspective plane of the picture (64), and connect the extreme points of this perpendicular with the point of sight. We next decide upon the position of the ship (A) by the line F F. Supposing the ship (A) to be *three* times the height of the sloop (B), a perpendicular elevated anywhere on the line F F three times the height that the sloop would be if she were perspectively on that line (F F), will give the true height of the ship as exemplified; for it is evident that if the sloop were at the same distance as the ship (A), that is, on the line F F, her height would appear as indicated — a b — etc. Again, still more remote from us, let us suppose another ship (D) *four* times the height of the sloop, the horizontal line G G expressing that distance. By a like process do we attain the height of the ship D under such circumstances; while another ship (H), still more remote, supposed to be of the same height as A, may be thus equally, and by a similar method, brought into true

perspective proportion. It matters not which object we begin with, or upon what point on the line of the horizon we fix as our vanishing line or point of sight: the result will be the same.

63. If we choose, however, to have recourse to horizontal instead of perpendicular measurements, we can do so. As one method illustrates and verifies the other, let us take an outline of the picture under consideration, and select as our standard of proportion the ship A. We take her height (a b), and (as indicated by an arc or by measurement) transfer it to the horizontal line F F; then from the point of sight, or vanishing point (c), we draw a line passing through the extreme as well as the dividing points of this horizontal measure. Now, it is plain that if the numerical points 1 2 3, measured from b, on the line F F, are equal to the corresponding points on the perpendicular lines a b, drawn through them and extended to the line E E will give 1 2 3 on E E perspectively equivalent to those on F F — which, being equal to the like divisions on a b (the height of the ship A), and the measure of one of these divisions, as e f taken on the line E E, must necessarily give the true height of the sloop floating on the line E E. And, further, if the ship A were on the line E E instead of F F, her height would be equal to the measure between g and 3 on that line. In like manner we may proceed with B, and so on throughout the picture; keeping always in mind the principles of the art, and working in harmony with them, our methods of operation can not lead to error.

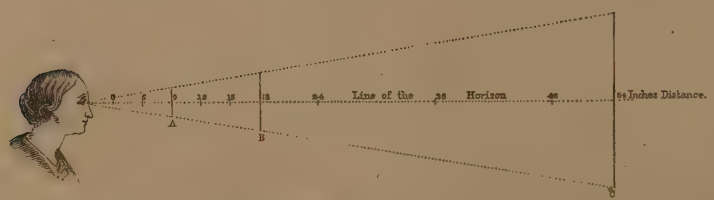


64. It should be remembered that in ascertaining the height of an object in perspective, we must do so by means of a perpendicular drawn or imagined to fall from the highest point of such object to the perspective plane. Thus, as in the following examples, the perspective height of the pyramidal figures is not to be measured on their outline, but by a perpendicular (A B) falling from their highest (A) to the central point (B) of their base. In like manner, we are not to measure the height of the vessels, in the examples we have just had under consideration, from the top of their masts to the water-line nearest to us, but to a central line and point between the water-lines on either side of their hulls — presuming the vessels to be becalmed, sitting perfectly even on the water, and their masts to be perpendicular. If otherwise, either by the action of the wind or other causes, we must still have recourse to a perpendicular as the basis of



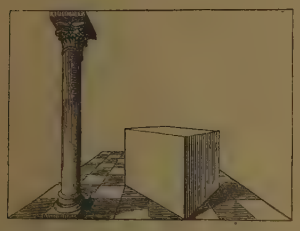
regulating their just perspective proportions as to height; and the same observations are applicable to any other objects, as will be more fully shown hereafter.

65. The judicious selection of a POINT OF DISTANCE for a picture should be one of the first considerations with an artist, and here again he has but to apply to art the practical teachings of nature. The size, the subject, the situation it is destined to occupy, the circumstances under which it is to be viewed, all require to be thought of in deciding upon the point of distance of a picture. It will be found that the delicately-constructed organ of sight instinctively refuses to receive more than a certain field of vision; and that as this field is increased, it seeks relief by increase of view. Thus, if we have a little picture of three inches in size, a point to view it less than nine inches distant from it is painful to the eye. A more distant point may be agreeable, but rarely one nearer, except with persons of defective vision — and even then the eye wanders over, rather than embraces the whole. If it be nine inches in size, eighteen inches may be fairly regarded as the most pleasing point of distance; thus, also, if of eighteen inches in size, at least fifty-four inches of distance should be allowed. Increase these sizes for the picture to feet, and like will be the result. Hence we may set it down as a general rule, to be consistent with the instinctive laws of vision, that the *distance of a picture should be at least equal to three times its size.*



66. It is from neglect or disregard of this rule that pictures often offend by the violence of their perspective. The eye instinctively rejects such impressions when they do not harmonize with its accustomed habits of observation of nature: everything seems disordered and disorganized, as they really are; it forms no just ideas of the relative positions and proportions of the scene or objects represented; and falling back upon its own impulsive conclusions, subjects art to a severer ordeal and a truer one than the most learned jury of the schools, who are too often blinded by the letter of the law, and forgetful of that simplicity of truth which is its soul, as it should be its substance, purpose, and end. In the first example, we have an outline of

an apartment equal in depth and width, with three figures viewed at the distance of three times the width of the picture; in the second and third of the same apartment, with like figures, this distance is reduced with evident progress to disproportion, and in the fourth the error becomes still more palpable—which a solitary column and a square block or cube presented on the two extremes of these examples will render still more apparent. The least practised eye will be struck by the comparison.



67. To carry out our illustration of violation of a proper selection of the distance of a picture, we have at the head of the next page the same view taken at two distances—the one equal to three times the width of the picture, the other at but one half its breadth, thereby reducing it, especially in the foreground, into positive distortion. In other words, with a point

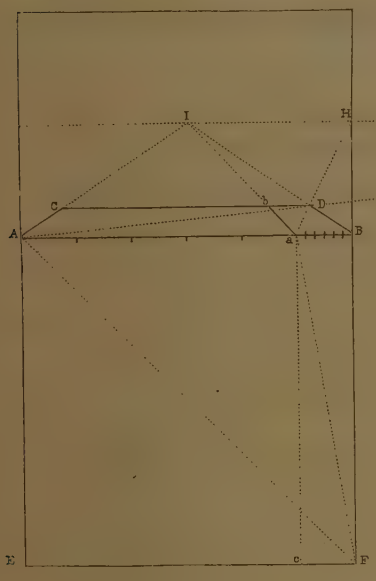
of distance assumed so near that the eye recognises neither unity nor harmony in its proportions. If the eye were placed so near to the first object in the picture (the corner post of the fence) as the distance of the second example indicates, it would naturally discard from its picture the

nearer objects, and, as it were, select a more remote base line—naturally seeking to supply the want of distance by concentrating the extent of its field of vision into a narrower space, and consequently reducing the size of the picture to its distance, where it can not increase the distance, to embrace a more agreeable view of the picture. For, as objects are more remote in the perspective picture, the exaggeration in relation to them, produced by an injudicious selection of distance between the point of observation and the picture, is gradually lost, the size of the picture being reduced, and consequently the point of distance increased in proportion to such reduction. Take as much of the view in the second as we have in the first example for our picture, discarding the nearer objects, and we have thus a nearer approach to a proper and well-proportioned distance by such reduction of its size.

68. The difficulty often felt by artists for want of space to extend a proper distance on the line of the horizon as far out of the frame of the picture as may be necessary, fortunately admits of easy remedy. In truth, for most purposes of practical operation, there will seldom be found occasion to go beyond the limits of the drawing-board or canvass, however it may be better in the study thereof for the clearer elucidation of its principles. As well secured and certain points upon our perspective plan, which are governed by the point of distance, in connexion with the diagonal of the square, form the basis of most perspective operations, the following method of fixing a fictitious point of any required distance within the frame of the picture can not fail, from its value, of eliciting the serious consideration of the student, and induce his earnest study and attention. Let us suppose our intended picture to be of the width of six parts (which we may call inches, feet, etc.), and we require therefor a working point within its frame that shall

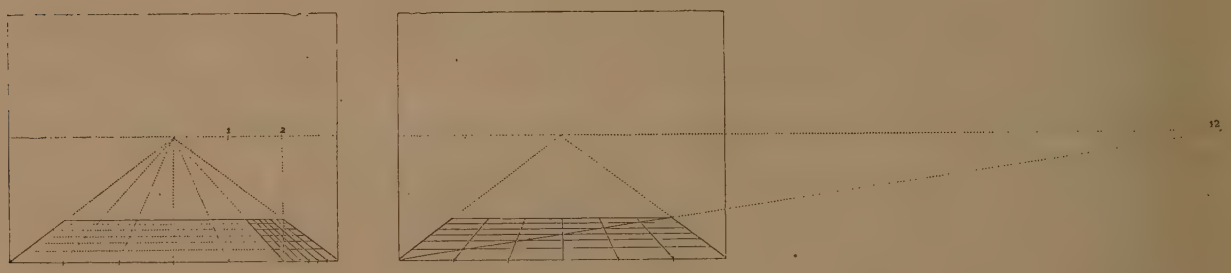
be equivalent to a point of distance of three times its width—that is, eighteen parts measured on the line of the horizon from the point of sight.

Without entering upon a more minute mathematical investigation of the principles involved than may be necessary for the practical application of the rule, and which a reference to the geometrical and perspective square sufficiently illustrate, let us begin by marking off on the base line six equal divisions, to represent the six parts which make the width of the picture. We have the geometrical square A B F E truly represented by the perspective square A C D B; its diagonal A D verifying the distance (I G) of eighteen parts; and the geometrical parallelogram a B F c perspectively produced in a B D b. It is plain that the line C D gives a perspective depth equal to any side of the geometrical square: it therefore represents the depth of six parts. The perspective diagonal A D of the square, and the perspective diagonal a D of the parallelogram, unite on one common point D, as do

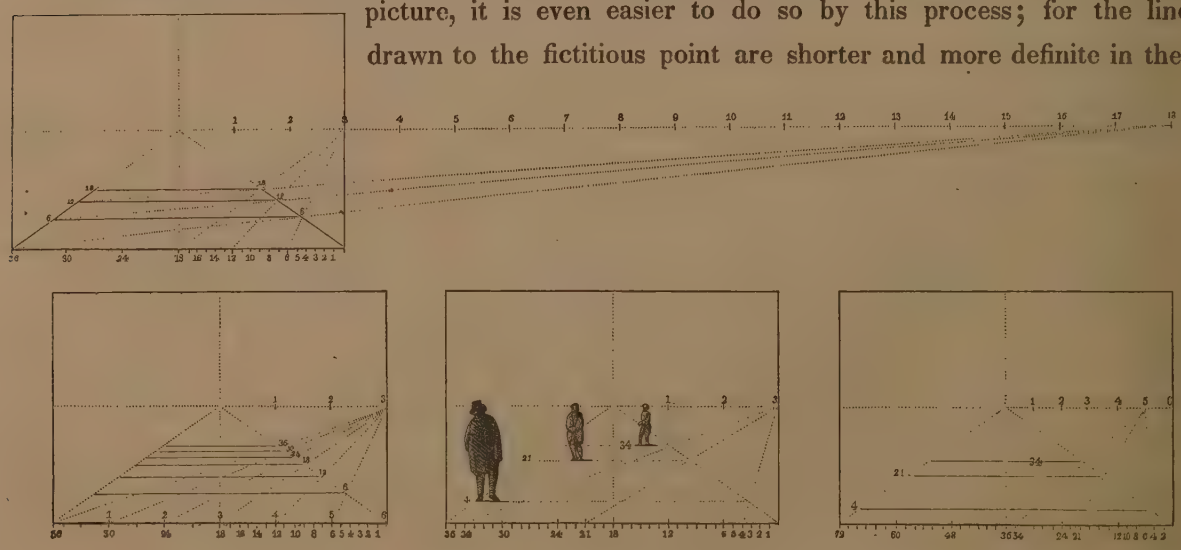


the diagonals F A—F a of the geometrical plan at F; and H is as veritable a vanishing point on the line of the horizon for the diagonal of the parallelogram as G is for the diagonal of the square. Now, by the aid of the diagonal of the square, we have at G our true working distance, but it is out of the picture. We therefore, to secure a working point upon a similar basis within the limits of the picture, make as it were a fictitious square of the parallelogram, by dividing its side a B into six parts, and assuming these six fictitious parts of a B equal to the six actual parts laid off on A B; in other words, we press the perspective parallelogram a B D b into the service of a square (A C D B), together with its diagonal, by giving to its defective sides six fictitious parts to stand for the six real parts of the square. The sides B D—a b being real, and terminating in the point of sight, are not affected by our assumption, but the diagonal a D is, as it thereby represents the diagonal of six such parallelograms united; and of course, instead of a distance of three parts at *the point* H, it gives six times that, and all that we require as a fictitious point of distance, fully equivalent, for all practical purposes, to the real point of distance G, and yet within the frame of the picture. Let us, as in the next example, for the sake of clearer illustration, reduce our distance to *twelve parts.* The result will be precisely the

same. In this case we take *two* parts measured on the line of the horizon, and make that our fictitious distance—*two* multiplied by the number of fictitious parts on our base line proving an equivalent to *twelve* real parts, or the true distance. And thus we have in the perspective of the parallelogram and its diagonal an efficient representation of the square, not only in the verification of our point of distance, but, working from a fictitious point of distance, to which it either directs or from which it originates, we are enabled to produce not only the perspective of a square, but all its parts and divisions, as perfectly as if we had the real point of distance measured on the line of the horizon—and with the advantage of having all our operations within the limits of the picture.

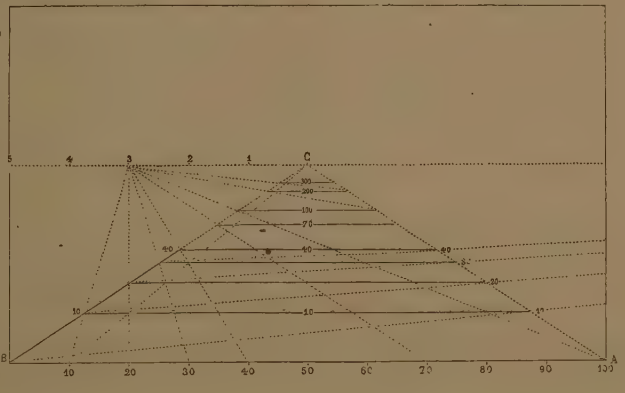


69. Again, if we desire to increase, to any degree, the perspective depth or plane of our picture, it is even easier to do so by this process; for the lines drawn to the fictitious point are shorter and more definite in their



intersection with those terminating in the point of sight or vanishing point, than those seeking a more lengthened termination in the real point of distance. It is evident, however, that as a distance equal to three times the width of the picture brings the fictitious point at 3 on its very edge, a greater distance—say five times the width thereof, or of thirty instead of eighteen parts—must necessarily carry such point beyond the field of the picture. To obviate this, and still secure a working point for our distance within the limits of the picture, we have but to double the scale on the line of the horizon, and also the fictitious scale on the base line to harmonize therewith, as shown in the concluding example on the last page, by which the point 5 gives as certain a point of operation in connexion with the doubled proportions on the base line. A distance of five times the width of the picture, however excessive it may appear, may in many cases be required, wherein this method will be found of great value. Suppose a picture twelve feet wide, destined to occupy a position which rendered it essential that its perspective should be calculated for a distance of sixty feet: few apartments could be found of sufficient extent for operation by a veritable point of such distance; and even in smaller works of the drawing-board or easel, the application of this method will be found to obviate a difficulty constantly encountered by the artist and draughtsman.

70. Further to illustrate the operation of adjustment of extreme distances of objects on the perspective plan: let us take *ten* parts for the width of our picture, which are justly expressed by the numerical points on the line of the horizon, and giving to those on the base line a fictitious proportion of ten to each real measure; thus, we have ***one hundred*** fictitious parts laid off on the base line, by points of *ten* each. Assuming our point of distance to be three times the width of the picture, that is, thirty parts, the numerical point 3 on the line of the horizon gives us a fictitious point of distance corresponding to the fictitious points on our base line. Thus we have the means of accurately defining on our perspective plan the length of the line A B at any distance in the picture we require. In the example before us, the verification of the first four lines at the distances of 10, 20, 30, and 40 parts, is proved by the diagonals running out of the picture to the right, which, if space would allow for their extension to an intersection of a continuation of the line of the horizon, would be found



to terminate and unite in the real point of distance, as those on the left terminate and unite in the fictitious point of distance 3 on the line of the horizon. Without requiring another example, suppose we had, say, an extensive view, and we desired to ascertain the perspective proportions of objects extremely remote; and further, that instead of allowing ten real parts (call them feet if you will) for the space embraced by the foreground or base line, we make it *one hundred*—thus by multiplying all our numerical points, real and fictitious, by ten, we have all that we desire. If we have an accurately laid down horizontal line, to get the perpendicular height of objects, no matter what they may be, at the distance of this line, is an operation already too familiar to need repetition.

71. It will be found that in many of the examples given we have been forced to the use of a shorter distance of view than has been recommended. This the limits of our page have in a great measure compelled, in the first place; and in the next, by exaggerating or making the perspective more violent than would be proper in a picture, the principles it was desired to illustrate may have been made more evident.

It is earnestly desired to impress upon the mind of the student the importance of resting satisfied with nothing short of a thorough comprehension of all as it is placed before him, testing and verifying each and every operation for himself. If less has been said and exemplified on the subject of the elementary principles of the art, with a more strictly mathematical analysis of these principles, it has been from the fear, based upon experience, that the learner might either wear out his patience in groping through geometrical labyrinths to little useful purpose, for want of consciousness of the ends for which he labored, or else break down in the very outset, as many a one has done before him, in terror of the long and cheerless way that presented itself—through mysterious-looking diagrams and geometrical problems, which not every head, if it has the capacity, possesses the resolution to encounter. Indeed, it may be fairly doubted if ever yet one of the huge volumes of perspective complexities, although full of geometrical learning and research, was gone through in downright earnestness by the student; and if it may have been, it nas been to comparatively little practical utility. The study of perspective, like that of all others connected with design, is not to be gone through by the book alone, page by page, to its accomplishment; but its knowledge must be attained by an eye rendered susceptible to the evidences of the truth of its principles, as they are developed in nature, and a mind gradually strengthened to their investigation and application in design, to which it holds the place of an accessory, not that of a primary motive. It comes to the aid of the artist in the development and expression of his art, as do many other branches of knowledge—any one, or all of which, acquired to the

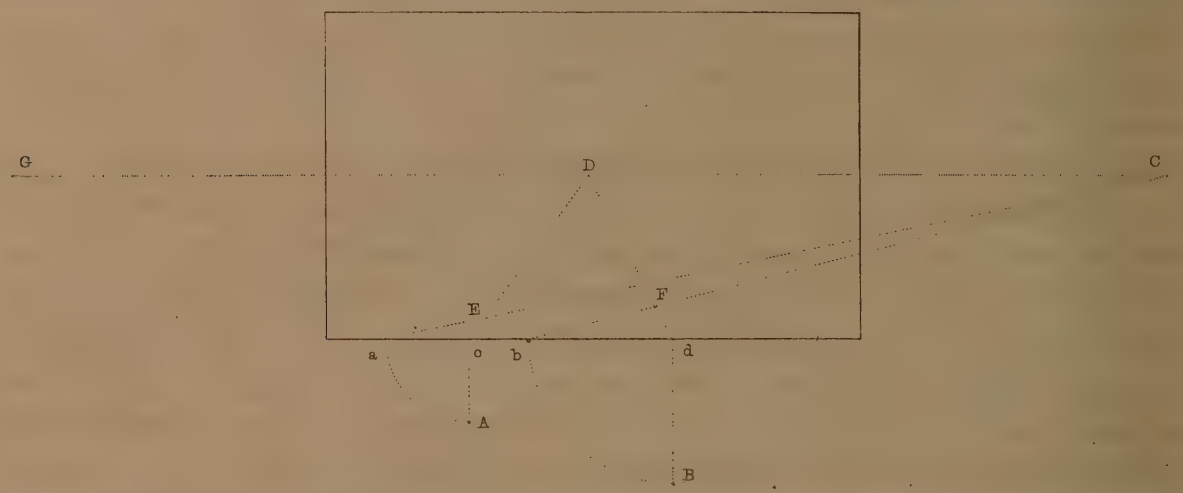
utmost extent of learning, would tend but little to constitute an artist, independent of the primary and mere leading qualifications requisite for the imitative and inventive art;—as the poetry of thought precedes the measured line and its rules of harmonious expression, and as no rules of prosody can make a poet or gift the mind with power of expansion to the bright and privileged world of fancy, yet is their assistance indispensable to reduce to order the pictures of its gathering or creation.

72. Here the artist-student of perspective might perhaps be safely left to pursue his course alone, and to rely upon his own judgment in following out the elementary principles of the art in their various and endless applications, as all that remains is chiefly based upon merely geometrical operations. To meet every case that may occur by an example, would swell our work to more volumes than there are pages at our disposal; and, after all, if such could be done, it would be scarcely worth the pains, and its place upon the book-shelf might be far better and more usefully occupied. Besides, the artist and draughtsman should hold the art in his mind, and eye, and hand—ready, quick as the thought or the impression, to give it utterance and expression. To be thus learned it is not necessary to be for ever bending over dull diagrams and untangling knotty problems. The field of art is too wide, its privileges too free for this. The artist's best school is abroad, in the bright, beautiful world of nature, for ever developing some new subject for admiration, and tempting his imitation. Nothing on which his eye can rest that does not teach him lessons of his art, when once his perceptions are awakened and trained to their comprehension. Endless as may be his work of knowledge, so are his resources; while others plod on a duller way through life, he reaps while he sows, and bright blossoms mingle their perfume with the ripened fruit, which repays his labors and makes glad his toil.

73. In resuming the consideration of the geometrical operations of perspective, we are naturally led back to the beginning, but to that beginning with a degree of preparation that leaves little more to be required than mere hints to assist the student in the application of the principles of the art, with which he must be already familiar. It is scarcely necessary to remark that we must have a distinct and definite idea of the forms and objects we desire to place in our picture under the influence of the laws of perspective. We must consider them as real and tangible, and upon the basis of this knowledge we are enabled perspectively to define their positions, proportions, parts, and details. In many cases we may be compelled to have recourse to imaginary data in the course of our operations, but still these data, governed by harmonious

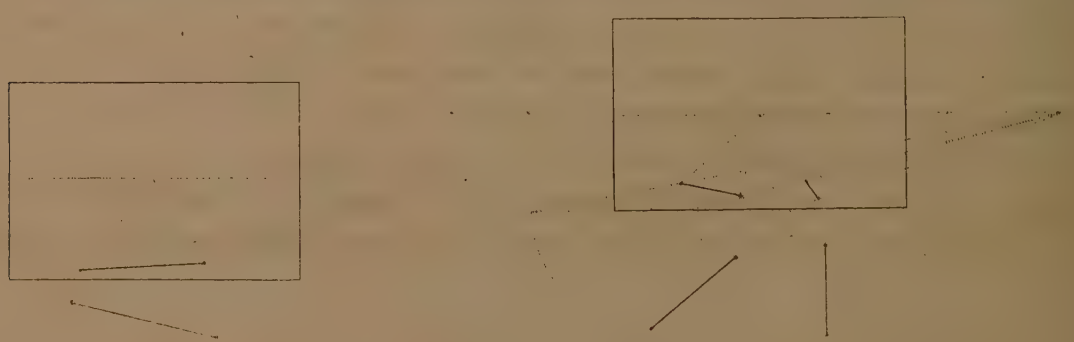
laws are sufficiently reliable for our purposes; brought, as they are, in constant contact, comparison, and trial, with self-evident truth, they can never deviate far from it without detection, and consequently ready means of correction are thus afforded.

74. To place a Point in Perspective.—Although this is but the repetition of an operation which has been repeatedly performed already, it comes in place, as the beginning of our geometrical exercises. Here we have no other geometrical plan than an indication of the actual



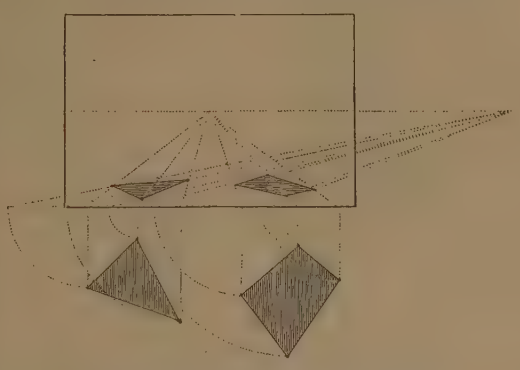
distances of two given points (A and B) from the base line, which distances being carried to the base line, as indicated, and repeated thereon, by arcs, or measurement, give two points (a and b) equivalent to the diagonal points of squares equal to the distances of A and B from the base line. Hence the lines connecting the points (c and d) marking the distances of A and B to the base line, with D, the point of sight—and the connexion of the diagonal points (a and b) with C, the point of distance of the picture, give in the intersection E the perspective position of A, and in F that of B—under the circumstances of C D C, the line of the horizon—D, the point of sight—D C, the distance of the picture, and A c, B d, the distances of A and B from the base line of the picture.

75. To place a Line in Perspective—having once secured its extreme points, as above,

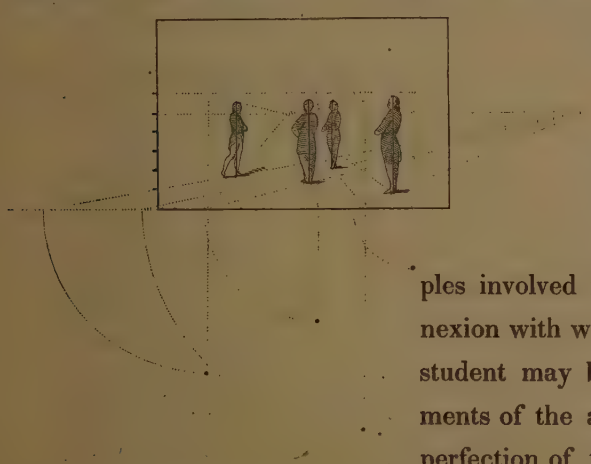


will certainly present no difficulty, no matter in what direction that line may be in reference to the base line of the picture. That done, it will be as easy to place three points in perspective as two, and four as three; therefore—

76. To place a triangle or irregular figure in perspective, by merely connecting such points thus attained, is a process equally as plain, without regard to the distinction between parallel or oblique perspective (48). All that is required to be known is the actual position in which it is desired to place such figures on the perspective plane in reference to the base line. In this example there is not a single line of the figures either at right angles or parallel with the base line; hence, not one in their perspective representation seeking a vanishing point in the point of sight, or running parallel with the base line and line of the horizon, as in the numerous instances of the square lying parallel to the picture, to which we have so often referred, and which must be sufficiently familiar to the student to render a repetition unnecessary; nor would it appear more requisite to renew our example.

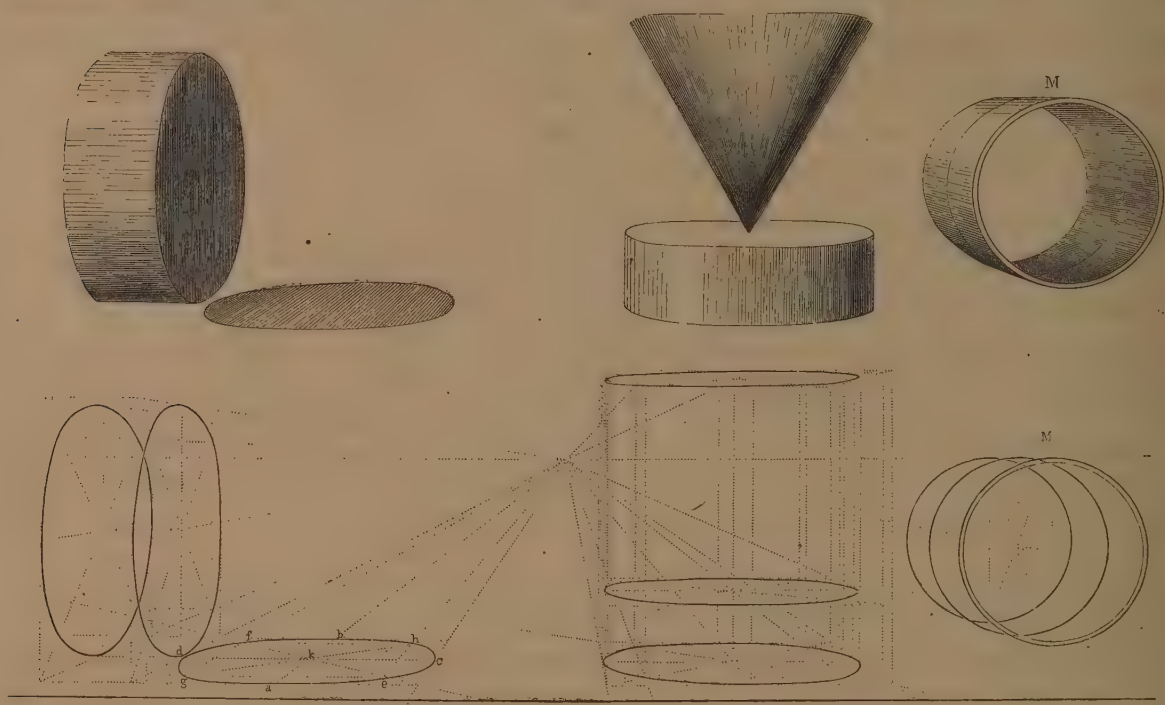


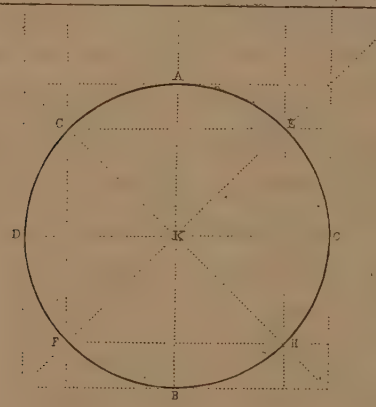
77. To place a perpendicular line or figure in perspective, except to preserve progression in our operations, and recall to mind those of a similar character which have been previously considered more at length.—Here, as in the case of all before us, we have no square or its diagonal expressed, but we have its governing principles throughout, working in as perfect harmony as to results. With a little careful practice and proper understanding of the principles involved in the few cases which will now be added, in connexion with what has been previously said and exemplified, the student may be safely considered in the possession of the elements of the art, and he should learn to look to himself for the perfection of the knowledge he may require, rather than to desire that all should be prepared for his hand. In the field of art, he that would reap must toil, however light may be made that toil if entered upon with a right spirit. He toils most painfully



who pursues its course in darkness and obscurity, and the light of truth is surest gained by earnest seeking.

78. To PLACE A CIRCLE IN PERSPECTIVE, whether as a simple form, lying flat upon the perspective plane, perpendicular to it, or in any other position — or taken as the basis of more solid

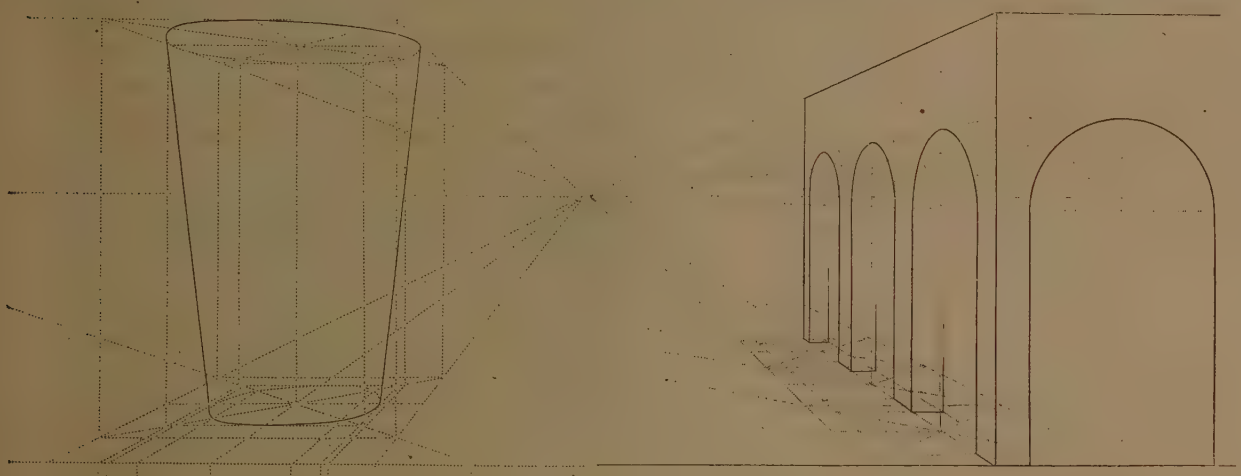


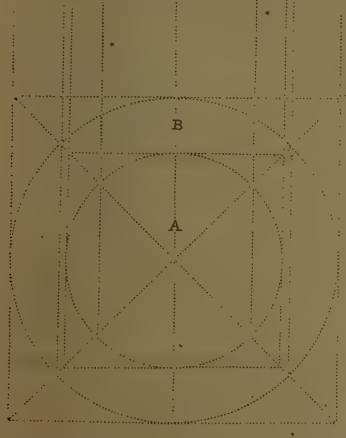


forms, such as the cylinder, cone, etc. — requires to have recourse to its relation to a square, as best illustrated by the examples, and the working operation by which they are perspectively produced; the points of the contact of the circle with those of the square, as A B—C D—E F—G H—K—forming the basis upon which in their reproduction in the picture as a b—c d—e f—g h—k, we can by their connexion, by an easy and harmonious line, in which we must depend upon accuracy of the eye and judgment, as well as decision of hand, attain the desired end. If the operation holds good in one case it will in another, and we have but to transfer such points to other required positions, under precisely the same circumstances that we would if we desired merely to place the square itself in

perspective. In the example M, the operation is more simple, from the parallel position of the circle in reference to the base line; here we have but to decide upon the central points, and the assistance of the compasses secures the circles.

79. To PLACE TWO CIRCLES OF DIFFERENT DIAMETERS, LYING HORIZONTALLY, ON A COMMON CENTRAL PERPENDICULAR, is but a similar process, as the example will show. To carry out this operation in the numerous cases in which it is applicable, such as columns, vases, and the like, would be an endless undertaking; and the student can for himself do better, by exercising his

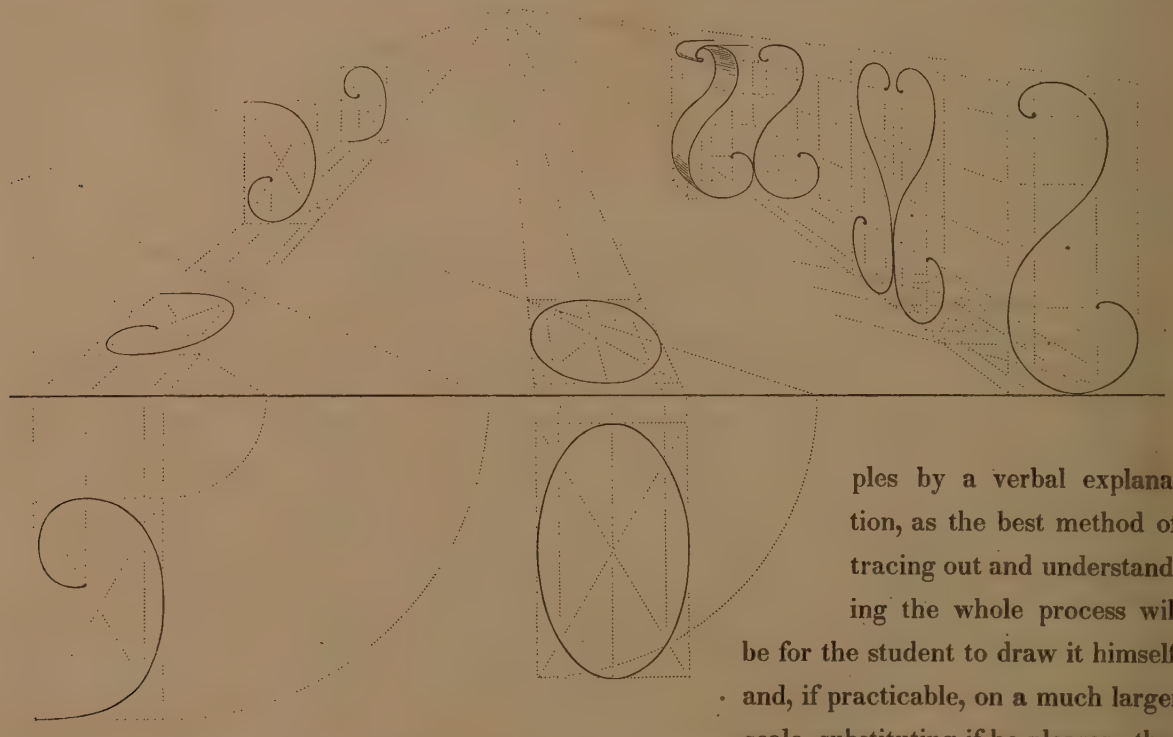




ingenuity, than if he had placed before him volumes of complicated diagrams, which are better comprehended in working through the progressive details of their operations, than attempting to untangle the unavoidable confusion of points and lines, which often tend more to distract and mislead than to elucidate. One result reached through our own earnest seeking is worth many attained by merely looking on to see how it is done. It becomes our own when we have fairly earned it, and in the way of its earning we may have gathered perhaps more than its value in other useful hints and points of knowledge, which would otherwise have been lost or overlooked by us. It is scarcely necessary to give a rule for the management of the semicircle, or any portion of the circle taken separately, as that which serves for the whole must hold equally good for a part. Above we have an example of a method—

80. To PLACE A LINE OF ARCHES IN PERSPECTIVE, which we leave to the student without remark. If it should puzzle him a little at first, it will be all the better for the exercise of his ingenuity. There is no line therein that has not its use and meaning, and every principle of the art connected with the operation has been, in some place or other, already explained.

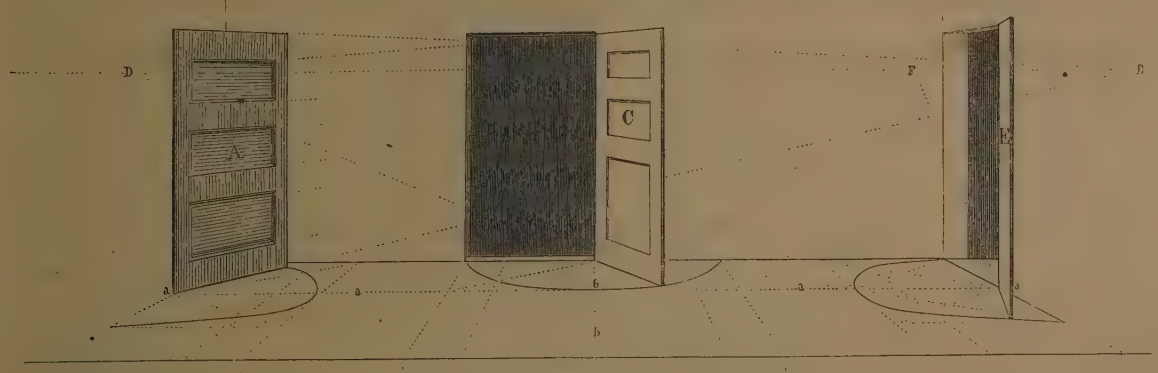
81. If attention thus far has been almost exclusively directed to the perspective of regular forms and figures, it is that its rules are more plainly demonstrable with reference to them than others of a more complex character. As soon as we leave right lines, all the art can do for us is to fix certain points, and we are left to our skill of hand and judgment for the rest. In the examples of the circle to which our attention has just been directed, we could but secure its perspective points with reference to the square; and had it been an ellipse, oval, or other more irregular form, the art would have done as much, under similar operations, by the selection of such points of the line or figure required as might form the most ready and secure basis of its perspective expression. It will not be necessary to follow the operation of the annexed exam-



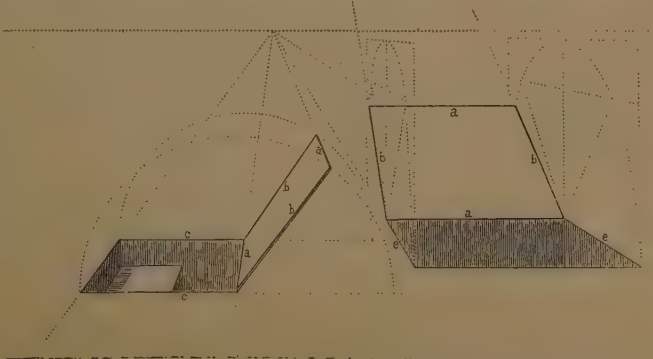
ples by a verbal explanation, as the best method of tracing out and understanding the whole process will be for the student to draw it himself, and, if practicable, on a much larger scale, substituting if he pleases other forms than those given, and under different circumstances of position, distance, etc. In immediate connexion with the operation of placing the circle or any of its parts in perspective, we

are led to its application in reference to open doors, shutters, box-lids, and such like, moving on central points or hinges; for in the opening and shutting of a door it describes nothing more nor less than the arc of a circle, on which arc, in connexion with its central point, we have our governing points. We must therefore look to the circle as the basis of our rule in all such and similar cases.

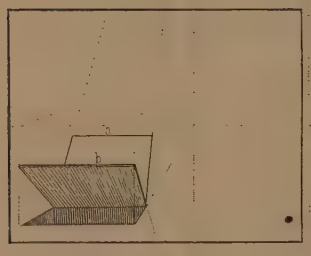
82. To PLACE AN OPEN DOOR, AND SUCH LIKE, IN PERSPECTIVE.—In reference to the example, the simplicity of this process will at once appear, the perspective plan of the semicircle forming the basis of the operation. The example, however, illustrates another point, to which reference was made some paragraphs back (47, 76), as well as on other occasions. We have, in no one of these open doors, their horizontal lines terminating or vanishing in the point of sight, or running parallel with either the base line or line of the horizon; but still they seek on the line of the horizon vanishing points in harmony with their position, as all the horizontal lines of A find

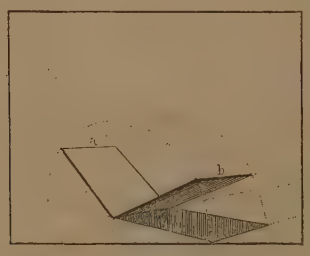


their termination or vanishing point at B, those of C at D, and those of E at F—which would not be the case were the three doors closed. In such case, those of C would run parallel with the line of the horizon and base of the picture, while those of A and E would necessarily terminate in the point of sight. And, on the other hand, were the doors opened so as exactly to stand at right angles with the wall—that is, if A and E were exactly on the line a a a a—then would their horizontal lines be *parallel* with the line of the horizon; and if C were exactly on the line b b, it would stand in a similar relation to the point of sight that A and E would do if closed, its horizontal lines terminating in the point of sight.



83. To PLACE IN PERSPECTIVE AN OPEN TRAP-DOOR, or any other object, in a position neither horizontal nor perpendicular, is a process somewhat similar to that we have just had under consideration, and which the last example on the preceding page sufficiently illustrates. If these doors were closed, their outlines would as perfectly harmonize with the base line and point of sight as a square or any other rectangular figure occupying a parallel position in reference to the base line; but when opened or moved from their horizontal position, the lines of their sides (a a—a a), which still retain that position, the one fixed on a central pivot by its hinges, and the other describing an arc of a circle about that centre, alone continue to harmonize with the point of sight, by seeking a vanishing point therein, or the base line by remaining parallel with it. The others (b b—b b) either preserve a parallel with themselves, as in the first figure, having started, as it were, in that relation to each other when the door was closed (as c c), while in the second figure they started from lines (e e) bearing reference to a vanishing point derived from the line of the horizon by virtue of their horizontal position which they lose the moment they are removed from it, and must necessarily seek, in describing the semicircle, a constantly changing termination; or, being never parallel to each other except when the door is perpendicular, that is, when it is even with the vertical line of the semicircle, they must necessarily, if extended, come in contact, and this point of contact is always somewhere on a vertical line drawn through the vanishing point in which they terminated when in a horizontal position, and either above or below the line of the horizon, according to their deviation from a perpendicular. In the first example before us, in which the trap-door lies parallel to the base line, the lines a b preserve their parallel relation to the base line, under all circumstances of their move-

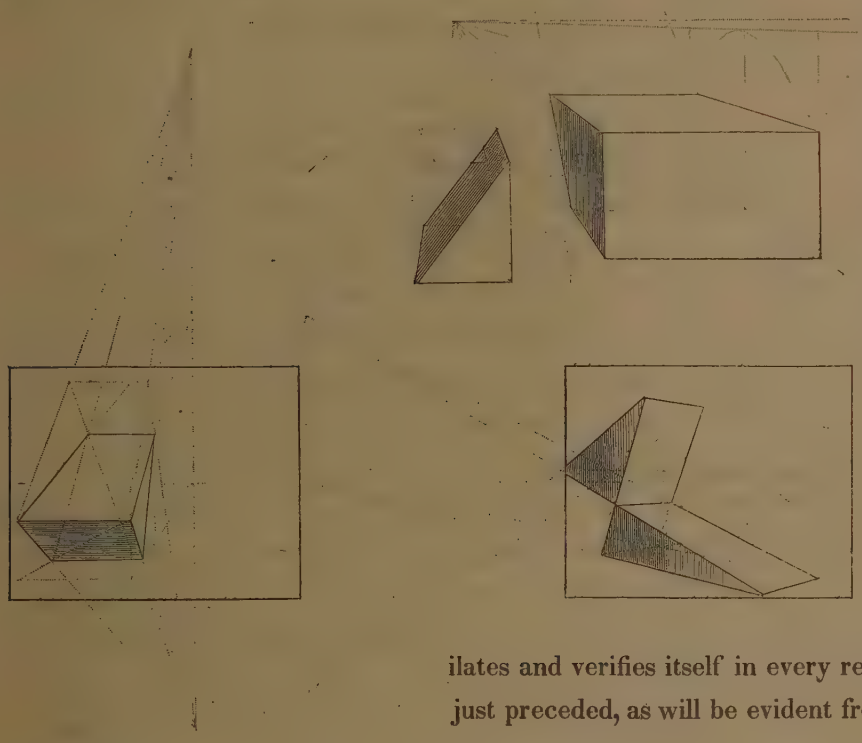




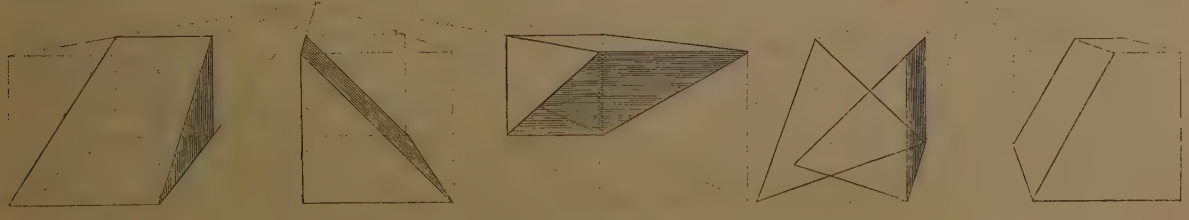
ment; while in the second example it is placed obliquely, and consequently these same lines being no longer parallel in the perspective, seek a vanishing point on the line of the horizon (as A) to which point they terminate, and with which they constantly agree in the movement of the door, while

the lines of the other sides find their termination on the vertical C D to their original vanishing point B. Now all this may seem to be a great deal to say about a trap-door, but if the pupil will give it his earnest attention, he will find in this and the previous examples the solution of one of the most beautiful problems of perspective—one well worth remembering.

84. To PLACE A PLANE, OR FIGURE, WHICH IS NEITHER HORIZONTAL NOR PERPENDICULAR, IN PERSPECTIVE.—This has already been accomplished, in part, in the operations just considered: for, if we regard such planes as the sides or parts of more solid forms, we have, in the rules by which we placed in perspective a simple door, either moving horizontally or vertically, the basis of unlimited application of the process, which assimilates and verifies itself in every respect with that which has just preceded, as will be evident from the examples annexed.



85. There are many cases, however, in which a shorter and more direct method may be adopted; one in which we assume such a solid form as the plane we desire to represent in a certain degree of inclination, may most naturally, and most advantageously for our purpose, form



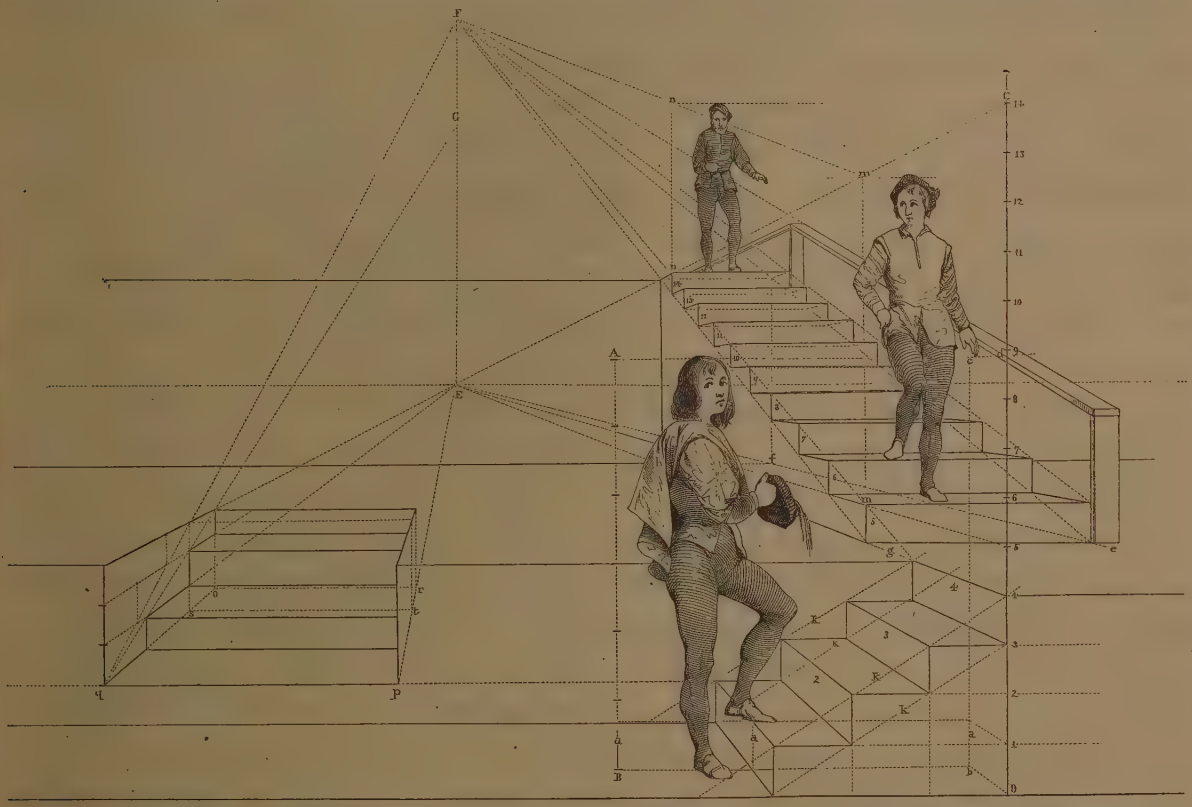
a part. With proper judgment in the selection of the assumed form, it is easy to see how manageable it may be made. A certain and decided figure once secured, the lines of its various sides, sections, diagonals, angles, etc., give all that can possibly be required as a basis. We have but to place such original figure in perspective, to acquire safe grounds of operation. If these inclined planes are intended as the basis of round or irregular forms, we must then proceed as in cases already explained, where such forms rested either on the horizontal or perpendicular plan or plane. Before leaving these examples, it is desirable to call attention to the influence of the line of the horizon and vertical line drawn through the point of sight, and their similarity of service with regard to the vanishing points of inclined planes—that is, planes inclined from either a horizontal or perpendicular position.

86. It must be evident that the mere opening or closing of a door in a picture can not affect either the point of sight, line of the horizon, or point of distance; and further, that the point of sight has no other influence on the vanishing point of the lines expressing their oblique position than its government of the line of the horizon in the one case, and vertical in the other, on which they find their concentration, more or less remote from the point of sight in proportion to their obliquity. Hence, the vanishing points of all objects and lines lying obliquely—that is, neither parallel with, nor at right angles to the imaginary line from the eye of the observer to the point of sight—may be considered as independent of the point of sight; however the point of their concentration or vanishing point must find its place upon the line of the horizon, or vertical, as the case may be. This, however, is only when such inclined lines or planes are based upon a horizontal or vertical plane: in others, occupying, as it were, a *doubly oblique* position—that is, having no coincident agreement with either a parallel or vertical—neither the line of the horizon nor vertical supplies a point of concentration for their vanishing points, but others must be sought in harmony with their position, and these are obtained by the operation of similar principles.

87. So far as the principles of the art of perspective are concerned, the vertical passing through the point of sight may be said to correspond with the line of the horizon; and many cases may occur in practice in which the vertical may serve even better than the line of the horizon; in which, instead of the base, we use the perpendicular side of the picture as its parallel. To illustrate this, we have but to look at an example of perspective by turning it so as to bring its sides in the relation of a base line—that is, change them from perpendiculars to horizontals—to see not only the similarity but unity of principle in consideration. If, for example, we have doors, window-shutters, oblique projections, and the like, to represent on the wall or side of a house,

moving or inclining, like trap-doors, etc., on a level floor, we have but to treat them as if they were on a level, by substituting the perpendicular for the base line or edge of our picture, and the vertical for the line of the horizon, in accordance therewith.

88. To PLACE A FLIGHT OF STEPS IN PERSPECTIVE, as well as figures in their just proportion on such, will prove an easy operation, as it requires but the exercise and application of the most simple rules of the art. In the example now presented, we have a double scale of proportions—

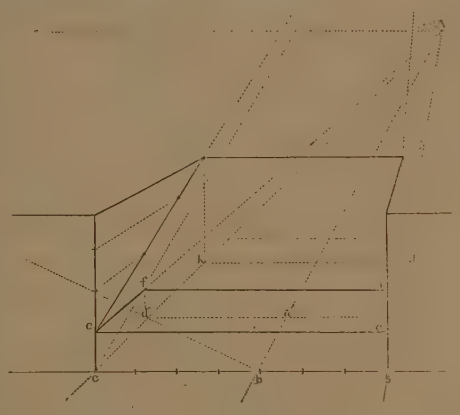


the one (A B) for the figures, the other (C D) for the steps—the one based upon and agreeing with the other. It matters not which we first assume; whether, in the outset, we adapt the scale for the figures to that of the steps, or the steps to the figures, or even which figure or which step we start with in our operation, the result will be the same—the advantage in commencing with the most prominent points only consisting in the readier attainment of accuracy by reducing from a larger rather than increasing from a less scale. It will be seen, by reference to the example, that the lines a—a give the height of the first step at the perspective distance in the picture of the first figure; and moreover, b c being equal to A B, the measure of the figure gives on C D at the point d

an equivalent to its height, equal to that of about nine steps, as indicated by the numerical points on C D. Without risking confusion in the example by the introduction of more numerical points and lettered references, we will suppose the process of producing the first four steps and the first figure evident—their proportions agreeing as well in relation to each other as to the figure—such lines as by reason of their position naturally run parallel with the base line and others seeking a concentration in E, the point of sight. The lines that, in reference to the first four steps, terminate in the point of sight, define the depth of each step, as well as the width of the whole flight (1, 2, 3, 4); but in those of the next (5 to 14), such give the direction, but not the depth, either of the individual steps, or that of the whole flight—horizontal lines necessarily performing that service. As, in the first, the lines (k, k, k, k) which express the inclination of the flight, and at the same time its width considered as a plane, are parallel to one another by reason of the parallel position of the base of such inclined plane with the base line of the picture, so must those in the second instance preserve an equal harmony with the base of their inclinations, whose lines (e f—g h), terminating or vanishing in the point of sight (E), fix their concentration in a point (F) vertical to and distant from it, according to the degree of inclination of the plane. It will be found as easy on such premises to define and perspectively to represent the second as the first flight. Our measures are still derived from one common scale (C D); in the second case we operate with lines running to the point of sight, precisely as we did with parallel lines in the first instance; and, on the other hand, with parallel lines as we did with those vanishing in the point of sight—the parallel lines of inclination (k, k, k, k) being supplied by others terminating in the point F.

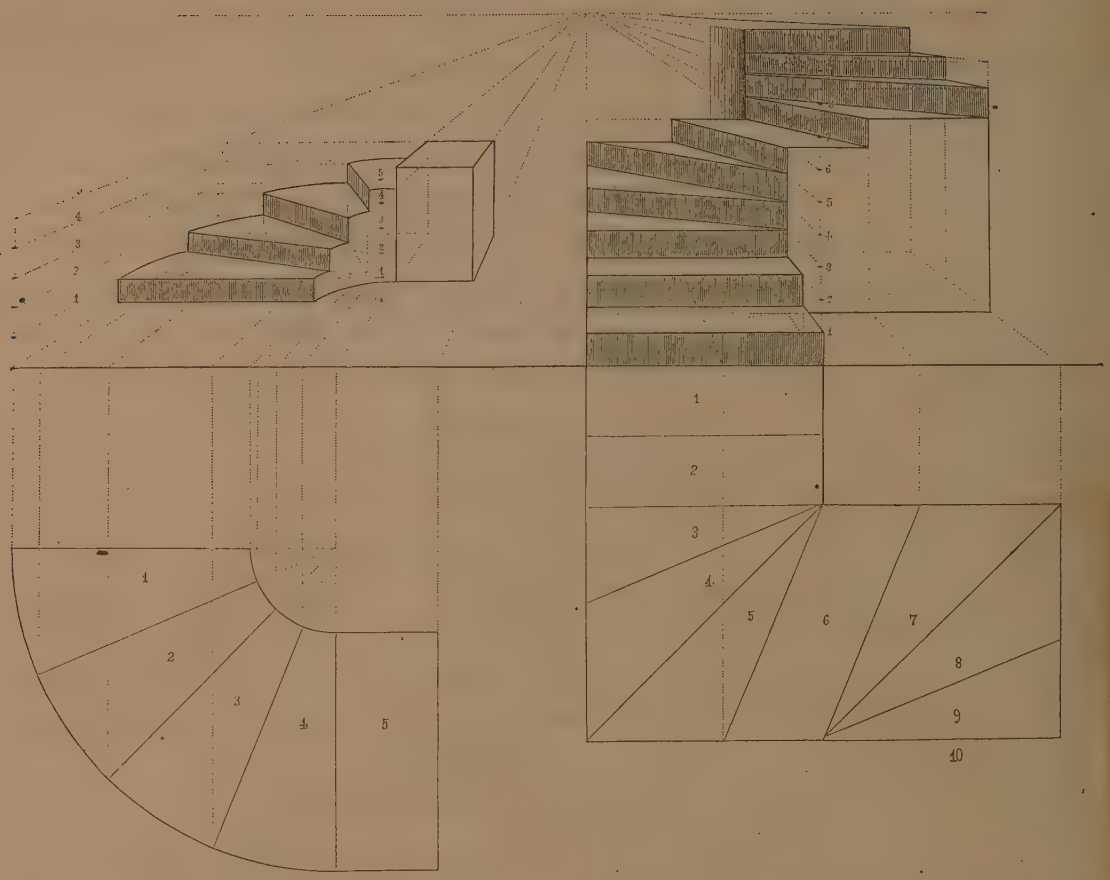
Carefully noting these observations and their application, with the assistance of the example, the whole operation will be found more simple than may at first sight appear.—As to the other figures: we know that our average height for the first is about equal to that of nine steps; therefore the position of a figure standing on the fifth step must give for its height, on the scale of our measurement of the steps (C D), considered as a perpendicular from the base line, about fourteen parts; m m therefore secures a measured perpendicular on the fifth step equal to the height of nine—and hence, by the lines m n F—m n F, the means of ascertaining the perspective diminution and just proportion of any figure or object on these steps, as well for a railing or other accessory that may be desired. With regard to the steps in the lower left-hand corner of the example, it will be remarked that by the nearer approach of the vanishing point G to the vanishing point E of the lines of their plane, they are deeper than those just considered (5 to 14), the angle of inclination (G q P) being less than that of F q P, and its base (r p—o q) longer; for if these steps were of the same depth as those from 5 to 14, their base would be as s t p q, and F q P their perspective angle of inclination.

89. As to the actual depth of each flight, measured on its base, or that of each individual step: in the first case it is plain enough at sight, and perspectively considered it may be equally so with reference to the others. In the one case we have a positive measure by reason of the parallel relation of their profile plan with the base line; and in the other we have but to recur to the diagonal of the square, in connexion with the point of distance, for equally as certain if not as ready premises. Let us take the last-considered flight of steps in illustration. The *height* of these steps we already know, for it was assumed in the beginning as our original scale, or taken in reference to the figure; if not, it can easily be obtained by a process too simple and familiar to require repetition. The height being laid down on the length, it is found that the step is seven times as long as it is high. Now suppose, it is desired that its depth should be equal to four times its height (let us say four times, as it gives more working room; were it more or less, a like operation would still serve as well): aided by the points of sight and distance, the square a b c d is easily obtained, and thus having d c and a b perspectively equal to c b—d a, gives as certain a measure of four times the height of the step as c b. We have now the base of the block forming the step; we know its height; therefore, to place the whole in just perspective is readily accomplished. Moreover, by the direction of a diagonal (c f), is secured a vanishing point on the vertical, which gives the accurately-defined plane of inclination of any number of such steps; or, on the other hand, if it is desired to assume the base (c g h k) of the whole flight as our premises, by its divisions and proportions like results may be attained.



90. To PLACE CIRCULAR, CURVED, OR OTHER THAN RECTILINEAR-SHAPED STEPS, IN PERSPECTIVE, is effected by the application of rules and methods already given, with reference to such like forms in their relation to rectilinear shapes.

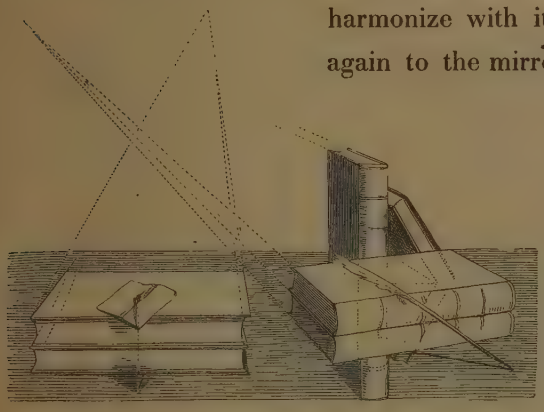
91. To PLACE IN PERSPECTIVE A WINDING OR SPIRAL FLIGHT OF STEPS, requires an operation more complex and laborious than difficult—one involving a perfect intelligence of the principles of the art, and one of the most profitable exercises that can possibly try the knowledge and ingenuity of the student. Complex and incomplete as may appear the example on the next page, without other explanation, it will be found perfectly intelligible, to those who have fairly investigated and practically verified for themselves the operations of the rules of the art.



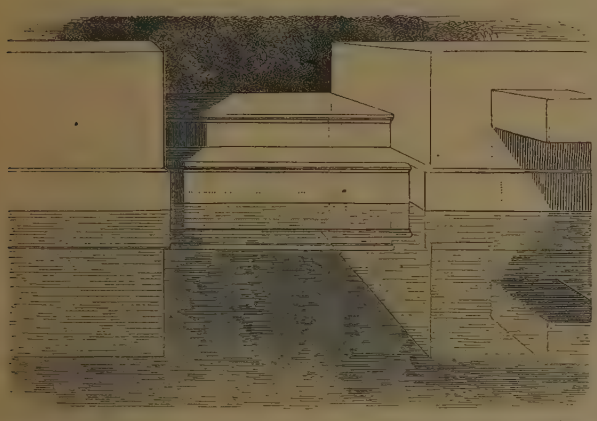
92. However incomplete a work on perspective may appear, without its rules in reference to shadows, the artist-student, whose eye now looks on nature alive to the just perception of the influences of the art, who can counterfeit the reality in conformity with its laws, can scarcely need a recipe for its shadows; falling, as they do, in masses, more or less defined, of position and form, modified and influenced in their shapes by the recipient object on which they are thrown, and those by whose intervention with the source of light they are produced; perspective pictures traced, as it were, on perspective pictures, and mutually developing each other in perfect harmony with the great and leading truths of the art; doubling the resources of design, in the means of its expression, and placing in the intelligence and hand of the artist a power as unlimited as the mind's imaginings.

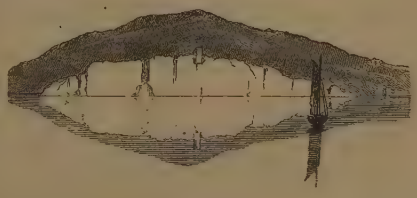
93. To PLACE OBJECTS REFLECTED IN PERSPECTIVE, needs but one general rule, requiring the reflection to be treated as a reality. Consider it, thus, an inverted duplicate, not of the picture,

but of the reality, and the way is plain. To illustrate and verify this, place a mirror level on a table, and upon it any object that first comes to hand, a book, a pen, a letter, anything—the perspective direction of the lines of the reflection will be found perfectly to harmonize with its original, and its image perfectly inverted. Look again to the mirror on the mantelpiece or wall, and remark how perfectly the perspective of the objects presented by it responds to the originals. Should the glass be not perpendicular, an irregularity, as it were a general upsetting of everything, will be perceived; for thus the perpendicular plane of its picture is thrown out of harmony with nature, and all its lines follow. The same would be the case if the mirror were placed flat, but not perfectly level, with regard to all objects retaining their horizontal and perpendicular character, but the reflected images of those resting on its surface would still harmonize with their originals, in the degree of inclination of its plane, etc.

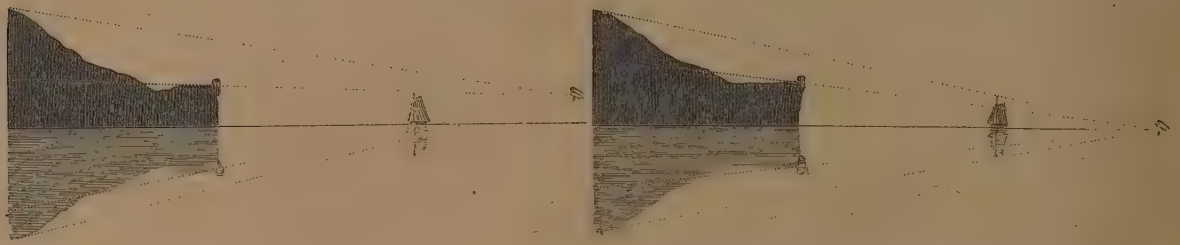


Fortunately, in our most frequent occasions to represent reflections, they are given back by a mirror, ever most true of all other objects to the level—Nature's mirror—not duplicating her perspective pictures, as presented to the eye, as if by a mere inverted tracing of their outlines, but with all the truth of an actually inverted image of the reality. Such objects as rise or occupy a position perpendicularly in reference to the mirror-like surface of the tranquil water, preserve their real proportions. Thus, the cliff that rises in an unbroken perpendicular above its base, throws its reflection to its full height; while that of the receding hill or distant mountain, although much higher, may scarcely be seen at all, though rising far above it—the boldness of the perpendicular cliff perspectively covering the inclined plane. If the point of observation could be placed exactly on a level with the water, then, and then only, would the real picture be repeated; but the slightest elevation of the point of view,



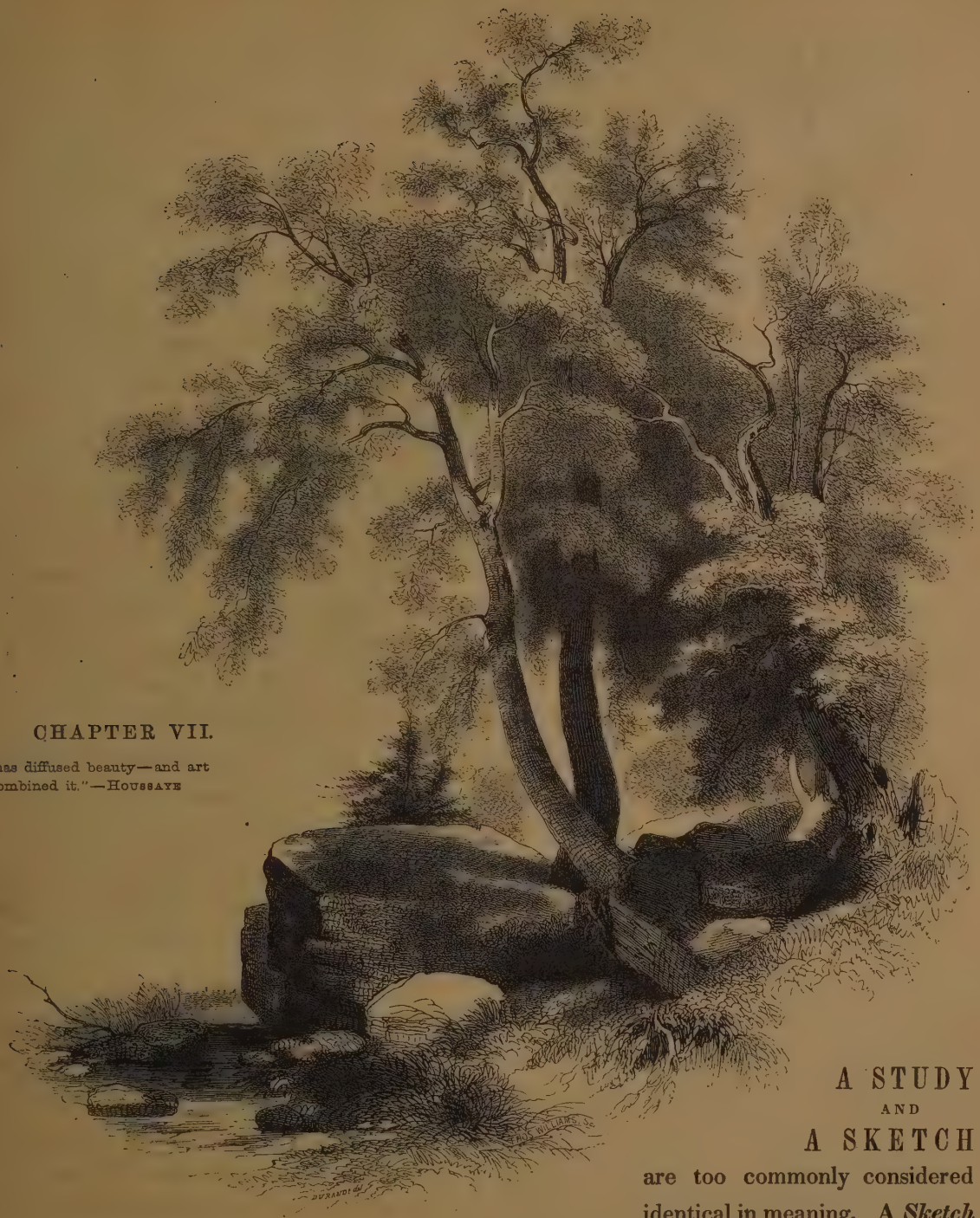


and consequently of the line of the horizon, above the level of the water, affects the general outline of everything reflected that is not perpendicular to the water's edge, as more fully demonstrated



in the annexed profiles, showing the perspective relations of the various elevations. In objects projecting over the water, as the beam in the example, the reflection will of course be naturally longer than the receding lines of the original. An arch may repeat its outer semicircle as perfectly in its reflection as it really is, and so may be also its more receding outline, but the archway itself is not perfectly duplicated. In the original we see less of its internal form than we do in the reflection, for the elevation of our point of view enables us to see farther into the reflection than within the arch itself.

Although brought to a conclusion of this chapter without having covered, as it may seem, the whole ground of perspective, the artist-student will find therein, if not a recipe for all his requirements, the elements and principles of the art sufficiently explained to enable him, upon their basis, to meet any difficulty that may be presented in the course of his practical operations. The fear of big books and elaborate treatises drive many a one from the pursuit of knowledge, and most of all, those devoted to the arts of design; whose restless spirits unwillingly bear the control of any established routine; unapt to delve in the mine of abstruse investigations, they hasten to conclusions; and, most fortunately, all their requirements of knowledge are progressive. Discovery and possession beget wants, and he who lives the longest, and knows the most, has more still to learn. In the next chapter it will come in place in some degree to review the subject of perspective as to its practical application in drawing and sketching from nature, when an opportunity will be presented of introducing at least more generally pleasing subjects for illustration than mere diagrams, (in which the author begs to acknowledge in advance the assistance with which he has been favored by many of his brother-artists, as well as the productions of those of other times), that can not fail to prove acceptable.



CHAPTER VII.

'God has diffused beauty—and art has combined it."—HOUSSAYE

A STUDY
AND
A SKETCH

are too commonly considered identical in meaning. A *Sketch* is but a graphic memorandum—an expedient; a *Study*, the more faithful record of well-digested investigation. However well a sketch may serve to retain a transitory impression, and, to some

extent, give it intelligible expression, its practical value and service rest in the reserve of higher capacity, only attainable by severer study. The one, therefore, leading more directly to that great highway of art, by which excellence is most surely reached, and capacity in the other more certainly, advantageously, and naturally, following as a result, leave little doubt upon which the greater reliance should be placed as a beginning.

2. However true it is, that a certain degree of aptness in sketching may be often found preceding more substantial acquirements, especially in cases of active sensibility to artistic impulse (not unfrequently thus first developing the inclination of genius), it can lead of itself but a very little way to excellence. This faculty, therefore, should never be overrated as a reliance, nor suffered to mislead to habits of superficial observation, or carelessness of manner, to which it has a tendency, unless restrained and directed by judicious cultivation.

3. The value of careful study, and drawing from nature, consists, not so much in the production of an elaborate work, as in the familiarity thereby obtained with the object of imitation. It is this familiarity with the truths of nature, stored upon the memory in continued accessions, that forms in time the reliable capital of the artist, upon which he may draw with confidence in all emergencies. It is this strength that fortifies him, not only in the truthful imitation of realities before him, and in their absence directs to available expedients; but, quickening and sustaining the imagination, emboldens its flight—secures it against the errors of inconsistency, and renders the language of art as easy and fluent as if traced by a poetic or historic pen. Herein lies the commonly-considered mysterious power which guides a master's hand, impressed upon all that emanates from it—from the faintest impromptu sketch to the most finished work; while he, who holds no such reserve, may attempt in vain to disguise the doubt and feebleness which embarrass all his efforts.

4. It should not be imagined, however, that in the importance attached to the closer and more minute study of nature, the practice of sketching should be disregarded or neglected. Capacity in each may be most happily cultivated together. It is by the habit of sketching that the eye and mind are made sensitive, while more careful study secures such advantages to available results. Both should be trained together, in quickness of perception, in aptness to the discovery of beauty and effectiveness in nature, and in forming conclusions with rapidity and decision: while the hand receives an equal training in obedience to their direction, following and recording their impulse almost instinctively; wasting no time or effort in trembling indecision, but aiming so directly at

truth, although often by lines, strangely few, and dashed off apparently at random, yet leaving little doubt or uncertainty in their meaning.

5. It is a common error with beginners, to imagine that facility in sketching may be gained by the imitation or copying of sketches. Many are the injurious influences of this delusion. The apparent ease with which a seeming carelessness of line or hand may be imitated, may be tempting to the gratification of a small measure of ambition, but should not divert from higher purposes than the mere counterfeiting of even a master's hand. If it were possible to gain, by such successful imitation, the impulse, knowledge, and certainty, by which it was guided, the effort would be worthy of the utmost pains that could be bestowed; but emulation of the power by which such masterly works have been produced must be sought in capacity beyond the imitation of individual manner or peculiarity, however excellent, and least of all in such as are developed in sketches. This comes with the strength acquired by earnest study and familiarity with nature, in readiness of hand in the expression of truth, thus gradually but certainly secured, and in independence of method or material to which it may be restricted.

6. However severe may appear the ordeal to the attainment of this desirable end, it will prove the surest as well as the easiest. The learner, therefore, should start and persevere in the determination of pursuing his way with steady devotion of purpose, leaving as little as possible unsecured as he advances. The work before him is no business of an hour, and there is no time to spare for insignificant trifling. The field of labor is the wide world of Nature—her beautiful truths the lessons to be learned by heart. Once fairly within her school, Art awakens to a life of sympathy with its teacher that lasts for ever. It should be ever borne in mind, that there is no object upon which the learner can direct his study, or practise his hand, whence may not be derived wholesome lessons, worth remembering, and that it is far better to accomplish one careful, well-studied, and accurately-finished drawing a month, than a hundred loose sketches a day. Let it be clearly understood that we do not mean, by "finished drawings," mere perfection of mechanical elaboration, minute idling with textures, or ostentatious display of labor, but accuracy of line and truthfulness of expression, be the means or method employed what they may. In the presence and palpability of error in these important points, no drawing, especially in the implied consideration of its being a study, can be said to be finished. Even when we may imagine our efforts to have reached their utmost in the attainment of this degree of perfection, careful revisal and comparison of our work with the model may lead to the detection of faults, the correction of which it can never be too late to effect; nor should the fear of "spoiling our work" ever deter from the

attempt. Such records of error, and evidences of research for truth, may, indeed, be worth as much as the results of more successful labor. Teachings of experience, thus brought home, are, of all others, the most wholesome in their influence, longest and most profitably remembered; and the master, which the learner may thus secure to himself, by severe self-investigation and trial, will ever prove the most reliable.

7. Brief as may have been the hints which have been given, in former chapters, with regard to drawing the figure, as well as more simple objects—if they have been practically applied, with that care and thought so often and earnestly urged, there remains but little more to add, beyond offering such assistance as may appear best calculated to render that knowledge effective in bolder attempts. Although he who can draw the most simple object perfectly, possesses all the secret, worth knowing, of drawing anything; to combine and arrange—to reduce to harmonious unity the various parts and elements of a work of art—is yet to be acquired, and only by study, trial, and practice. Not that sort of hand-mill practice which is satisfied with mere mechanical employment; but that which carries with it a constant spirit of investigation, overcomes all difficulty, and by which the eye and mind are enlivened to the perception of truth, and the hand trained to instinctive readiness and decision in its expression.

8. It might appear that in drawing from nature, with the object before us, no more could be required than to copy what we see. This would be true, if all really exhibited in the model were sufficiently evident to unassisted observation for its faithful delineation. The eye may be a safe and faithful guide, as well as critic, to a certain extent; but, like too many critics, however apt in the detection of error, it is not always equally ready and reliable in supplying the means of discovering causes, or directing to available remedy. The most unlearned in art may be able to discover that there is something wrong in its representations, but it is rarely that other than the educated can identify that something, detect its cause, and suggest means of correction. Every one is familiar with the divisions and markings of the face of a watch; but it requires at least some knowledge of the principles by which the circumference of the circle may be accurately divided, to delineate it with precision. Every one knows that a hand has four fingers and a thumb; but, to draw the hand with anatomical accuracy, to express its outward appearance correctly, requires a knowledge of the general principles of its internal structure—of the bones that form its framework, and define its proportions—of the muscles and tendons that direct its action, and of the effect produced upon its exterior by such internal arrangement. A similar knowledge of the whole human figure, extending to all animated nature, and descending to the most insignificant

work of creation, is equally important, whenever their faithful representation is attempted. To draw the humblest weed or flower with care and fidelity, at least some knowledge of its qualities and conformation must be possessed, beyond that presented to unenlightened observation. This comes as no insignificant part of the business, purpose, and meaning, in an artistic sense, of *study of nature*, and marks the distinction between the tame and spiritless attempt at merely copying all that the eye, unaided by superior intelligence, discovers, and the more decided and truthful expression which alone can satisfy it, when thus sustained. It is a familiar truth to every one, that in all pictorial representations, as objects are intended to be expressed in more or less remote positions from the point of observation, they should be reduced more or less in size. The eye of the most common observer readily receives and acknowledges the truthfulness of a happy adjustment of these proportions, and is impressed as readily with error therein; but it is only by the laws and principles of perspective that they can be justly regulated. Hence, it is evident that, to judge correctly of objects in nature, as they really appear, the eye requires assistance; and, therefore, such assistance should be sought early, assiduously, and continually. If the learner starts rightly, he will go on safely. Every investigating look bestowed on nature, every line he traces, will bear him onward. Happily, it is not requisite, in doing this, that his progress, in perhaps more pleasing and less laborious ways of art, should be interrupted or impeded. He may, and should, learn and gather as he goes—ever mindful that the gathering of knowledge in the pursuit of artistic excellence is endless, and neither weary of the way nor recoil from the pains or labor by which it may be gained.

9. It should not be understood, by what has been said, that no one should venture to draw the dial-face of a watch without having previously secured the thorough qualifications of a geometrician; that, to delineate a hand, the anatomical knowledge of a surgeon is prerequisite—a plant, a perfect comprehension of its botanical characteristics; or that every line and portion of a picture should be laid down and measured by perspective calculations. Were such the extent of requirements by which truth in artistic imitation could alone be attainable, no measure of a single life, nor amount of capacity of endurance, would be sufficient to accomplish more than a beginning. Our purpose is, to impress the student with the importance of starting in the surest, and therefore, as will be found by trial, the easiest way; to show the value of study and investigation; to point to the only reliable resources for discovery and correction of error, and the means by which it may be avoided; to disabuse his mind of every idea that "well enough" should ever do in art; and that every effort should command his utmost exertion. Thus every attempt and every achievement will be advanced, nearer and nearer a degree of perfection,

which, although it may not be reached, is nevertheless approachable, and that by a sure and well-tried course, the *study of nature.*

10. Many are the pernicious consequences to be dreaded by injudiciously overburdening the Art-Student with preparatory studies; and, not least among them, the diversion of a pursuit, that should ever bear with it lasting love and willing devotion, into one of toil, and perhaps fatal disgust. In all cases where excellence has ever been attained in art, love for it has been the first, continued, and abiding impulse. To cherish this love, therefore, should be ever an important consideration, whether its impulse lead to the devotion of life to its indulgence, or we seek its consolations as relaxation from more toilsome ways of life, or its purifying influence on our hearts and thoughts by the cultivation of that privileged intimacy with nature to which it leads. The progressive attainments of the Art-Student, nevertheless, require a certain degree of practical preparation for their advantageous acquirement. Where a want is felt, its supply becomes at once an enduring benefit. When we are sensible of the nature and amount of our deficiencies, we seek more earnestly and profitably their supply than if made in anticipation. Were art worthier of no higher consideration than a mere trade; were there not so much better and more profitable work to be done; could labor expended in preparatory studies be secured as a safe investment, to produce return in figures against figures—all this might appear but provident and proper. But, as this can not be; as no one, in the beginning, can either comprehend the amount or nature of the knowledge he may require; as there is no cool-headed calculation to be made in the matter, beyond the certainty of encounter with difficulties; as these difficulties will be found rarely, if ever, beyond the ready strength of the learner to meet and overcome as encountered; as thus the way is made one of delightful progression, for ever hopeful, and onward, and sure—one well tried and verified by results—it may be pursued with confidence, at least until a better is discovered.

11. There have been many "who, by their genius, grasping in its might its aims with a seeming independence of will over all ways and means of art, have produced wonders in their way, which seem to defy all trace of the means by which they were produced;" but let us rather profit by the fate of those who have vainly and often fatally endeavored to follow such eagle-flights, and place our confidence on surer guidance. It is very certain that no one was ever born with genius that could grasp instinctively, and at once, the first principles of art. All have learned, and all must learn, *to draw.* In this is involved all of art that teaching can impart. It is the letter and grammar of its language, without which genius is but an ignited exhalation, that may excite

momentary wonder, but soon burns out for want of that cherishing which education alone can supply.

12. There may be something incomprehensible to the uninitiated in the freedom and certainty with which an experienced artist expresses himself—whether it be the imitation of a model before him, or a creation of the imagination; but the mystery ceases when we know the methodical process by which it is effected. Guided by secured knowledge; practically familiar with all the expedients of his art; seeing clearly what he has to do, and knowing well how to do it; losing no time in hesitation, or feeling, as it were, his way—his work, from first to last, from a few apparently random lines to the utmost degree of finish, is always masterly. Those who would emulate such skill, must learn as he has learned.

13. It matters not what may be the limits of excellence which the aspirant to knowledge and practical skill in design may prescribe to himself. That which is available to the more restrained and less ambitious pretensions of the amateur, is equally and indeed absolutely necessary to the professional Artist. The one great purpose, paramount to all others, in the beginning, should be, *to learn to draw.* Hence is derived the faculty of just observation and appreciation of Nature, as a faithful teacher and reliable resource, leading to an uncompromising love of her truths that constitutes the soul of art, thereby maturing to our possession a standard of excellence upon which we may safely rely, in profiting by the productions of others, as well as the experience of our own failures or successes.

14. In insisting upon this importance of learning to draw, more may be meant than may appear in the common acceptation of the term. Capacity for drawing means more than the power of producing a linear representation. The sculptor *draws*, when he models the plastic clay into imitative or ideal creations. The painter *draws*, when he disposes his pigments with like impulse. Still further, the stalwart smith *draws*, when he shapes the heated metal into a given or required form. Thus upward might we trace the application of the word, in its true sense, until we reached the brightest creation of poetry or thought that art ever yet embodied, or ever will—all resting and governed in their practical application by either mental or palpable linear operations. It is by lines that the sculptor preserves his proportions, disposes his masses, and assimilates his accessories into harmonious unity. Equally so does the painter, in the disposition of light and shadow, in the regulation of his masses of color, even in the adjustment of their balances, reliefs, and effects; which should be as subservient to the preservation of accuracy of

form, and consistency of action and expression, in a picture, as in a statue or linear representation. The rudest cross-road smith never shaped or fitted a horse-shoe without the aid of governing lines of direction and comparison, and without being as much a draughtsman, in his way, to do so successfully, as ever sculptor or painter in theirs—however applied in an art that, if admitted among the Fine-Arts, might extend the family connexion to a limit alarming to the unnecessary if not reprehensible fastidiousness of the sisters. If the connecting links could be brought only a little closer together, and knowledge of the rudiments of design could be more generally and generously diffused among the inferior arts, they, with mankind, would be all the better for it, and the more dainty-fingered community of the muses the gainers thereby—if in no other respect, in a more general appreciation and acceptation of their real and practical value.

15. Among the many errors of beginners, there is none more common than a disposition to find fault with anything rather than themselves—especially with their materials. Chalks, pencils, paper, colors, canvas, bear in their turn its brunt; and even their models, be they the best in the world, are never what they should be. If they go into an artist's studio, they shower their questions upon him without mercy: "Where did you get it?"—"Can I get some like it?"—"If I only had it, I should require no more!"—when they may have the same in use, if not abuse, every day. Then, "Where did you get the model of that head? that hand? that foot?" Give them the same, and most probably as deplorably deficient will be their work with it. He who has his perceptions of truth keenly alive, his mind and capacity properly trained, can find good materials and models anywhere. It is this that constitutes, in an important point, the independence of the educated artist. It is this that expands his mind to look beyond the personal and temporary in Nature to her permanent and universal characteristics; which brings him to feel rightly, to reason clearly; which fortifies him in analyzing and deciding upon possibilities, in distinguishing degrees, resemblances, and differences; which imbues his mind with a sensibility to the perception of beauty, a judgment refining all that passes within its range, and a love for truth, in all and every thing, which to art is its religion. It matters not what means he may select for the expression of an idea: an humble bit of charcoal and a scrap of wrapping-paper may be thus employed, in exhibiting the higher attributes of true art, more effectually than the choicest materials of a London or Parisian magazine would ever help an inferior and uneducated hand to achieve.

16. Another and still more common mistake with beginners is to be in too great a hurry, and not to bestow sufficient consideration and study upon their subject previous to a commencement of their work. Instead of first making themselves familiar with its motive, or action, mentally,

and then slightly indicating its leading points and lines, they dash headlong to work, and most probably in a very few minutes get their drawing into a hopeless tangle of confusion and inaccuracy. Then comes the vexatious work of erasure and correction; and, worse still, error is added to error, until failure and self-disgust end the effort, with that consequent dread of a repetition of the trial so fatal in its consequences. Thus have we seen, for want of proper forethought, and the practical knowledge obtainable by a well-regulated course of training, many, possessing in other respects most substantial artistic qualifications, driven almost to hopeless desperation, profitlessly groping in darkness, when the light that might be had so easily would have insured success. For want of method, this little knowledge, and practical experience, it has been with pain that we have often observed them labor in error. Thus have we seen a figure, started in the middle of a sheet, run off, through every variety of distortion, into a corner: another, thus cut off and crowded into its limits at bottom, while the head had abundant space to spare at top for its due proportions: a landscape with no room for its foreground—a foreground with no room for the landscape, and, if brought in at all, out of all proportion, and in violation of every law of truth and nature: streams running up hill: and any number of false vanishing-points, governed by equally false horizons and points of distance. A tenth part of the time wasted in vexatious attempts to amend and correct errors thus committed, devoted to careful consideration of the subject, aided by proper intelligence, would not only save all such misapplied labor, but insure the most easy and gratifying results. Even in sketches, where rapidity of execution may be unavoidable, in order to secure as rapidly as possible some transient effect or impression, or where the artist may be restricted, as to time, in producing a memorandum, such errors will rarely occur with one trained to habits of accuracy. In everything that takes the higher rank of a *study*, they are inexcusable.

17. The errors to which we have particularly alluded lie at the root of many others, which are the prevailing causes of difficulty almost universally experienced by beginners in sketching, drawing, and painting, from nature. We constantly hear the complaint from them that "their models will not hold still." The gentlest breeze that stirs the leaves of a tree or plant, or drives too rapidly the flying mists over a morning sky, or that rolls the storm-clouds in piles of grandeur, annoys and puts them out. For them the glowing tints of evening pass away unrecorded and unappropriated, save perhaps by a faint and profitless momentary impression. The playful loveliness of infancy, the riper flush and elastic gracefulness of beauty, the breathing life and animation of Nature, are all to them forbidden themes. It is not so with him who encounters Nature prepared, in the strength of his art, to receive and appropriate her suggestions. He requires her not

to sit to him as a hired model, but takes her as he finds her, in her own freedom, and brings her home with him, as it were, to his studio, to come forth reproduced and perpetuated by his art.

18. The purposes of a study in design, involving so much more than the mere production of a recognisable drawing or representation—as the advantages to be derived therefrom are in proportion to the knowledge, theoretical as well as practical, to be gained thereby—neither time nor pains thus bestowed can ever be misapplied, nor will they be regretted. The utmost effort should always be exerted to secure the greatest accuracy in all respects, even to the elaboration of the minutest details.

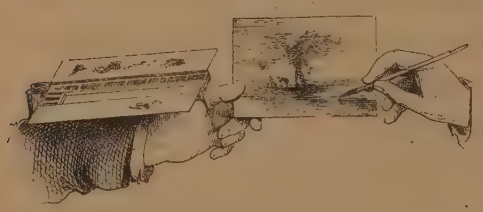
19. It is false to suppose that the study and imitation of minutiæ in nature, in the beginning, has by any means a tendency to warp the mind, or to contract the hand into habits of littleness. The history of the career of most, if not of all, who have reached high attainment in Art, bears evidence to the contrary; and their progress, from laborious minuteness to grandeur, may be traced with edifying interest. Michael Angelo, Raphael, Leonardo da Vinci, and many others, might be named as instances. The drawings and studies, still in existence, of these men, as well as their greater works, are, many of them, marvels of elaboration in their way. The early pictures of Titian and the founders of the Venetian school are equally marked by the most careful regard to details; and the evidences of perfect knowledge of their value and masterly command of them as expedients, thus gained, are as clearly discoverable in their bolder and later works. Thus reviewing the whole field of excellence in artistic achievement, the happy influence of a close and scrutinizing study of nature may be traced.

20. "It would appear almost incomprehensible," to use the words of a great historian of art, "that the excellence of the great masters of art should have been so rarely rivalled, with all the superior means and resources of intelligence that we possess, and the examples they have left to us; and that a knowledge of the path has not been sufficient in itself to enable enlightened spirits to run the same career with success." The question suggests itself, how far we may have looked too earnestly to the end rather than considered the means of its attainment; and, in seeking by-roads and shorter paths, may have lost more ground than we have gained by leaving the well-tried highway. That too much theoretical quackery in teaching may have had much to do with it can scarcely be doubted. It is true that these men, in almost all cases, received instruction from masters; but it was of the simplest kind, and always directed to the acquirement of practical skill, rather than to the discovery of contrivance. The pupil was the companion and,

generally, assistant of the master from the beginning. There were no long and wearying preparatory studies exacted of him. He was led at once to results measured to his capacity. His strength was tried, his weakness assisted. The aid he received was derived from the experience of the master. All that was to be done, he did himself. Artists were the leaders and exemplifiers of the capacity of their art. The student was *set to work*—as, in the honest sincerity of our convictions, he should be now—*to learn to draw.* He that can not draw a straight line, the simplest, easiest, and most comprehensible, has certainly much to learn, and should begin with it. He that can, has already made no inconsiderable advancement. The mystery is developed; the next step must be onward, and onward safely, surely, and successfully. Books and theories are all well enough in good time. There has scarcely ever been anything said or written in relation to art that may not be listened to or read to advantage, when sufficient practical knowledge has been secured to strengthen the judgment in forming just conclusions; but, to the inexperienced, they are often not only embarrassing, but in a measure profitless.

21. The materials commonly employed in drawing, and studying from nature, are so numerous and varied, and so well known, that it would seem scarcely necessary to say more than that the learner should select such as may be best adapted to his purpose. To this end, that which will most perfectly realize the faithful representation of his subject, rather than that which offers the temptation of expedition, should be considered. Our decided preference for the *Pen*, over all other instruments, would incline us to recommend its employment on all occasions, when practicable. There is nothing within the requirement of a study, with the exception of color, that may not be realized by it. The uncompromising character of its lines is the surest safeguard against the numerous vices and errors common to learners, as well as corrective of habits of carelessness, and looseness of manner, which the pencil and Indian-rubber are apt to induce. True it may be, that a pen-and-ink drawing may not look quite so fair to ordinary judgments as if it were done in crayon or pencil, stumped and tortured until "you can't see the marks." But it is very certain that he who can produce one such, to the degree of perfection of which the pen is capable, has learned more in its execution, and more fully realized the advantages of *a study*, in all respects, than could be obtained by any other more rapid process with which we are acquainted. He who is habituated to the use of the pen, and in whose hand it is obedient, will never be at a loss with any instrument he may employ. Faithful, however, as a servant, it is an exacting master, and no ordinary degree of trial, or amount of perseverance and courage, may be required to meet its exactions. It is just the kind of master that the Art-Student should secure to himself. Uncompromising in error, severe in its requirements, it neither flatters nor deceives, and repays in tenfold measure all the pains and labor it enjoins.

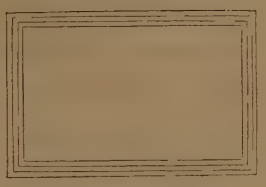
We would not, however, by any means insist that those who lack the courage and perseverance which the use of the pen may require, should be denied indulgence with less-exacting instruments. We have only to say, take the pen, as the best calculated, in our opinion, to make you a good draughtsman. Sooner than you should take nothing, take anything you please. The variety of instruments, methods, and materials, from which to choose, is sufficiently ample to meet the most fastidious or even capricious requirement. First, there is the *Black-lead Pencil*, of different degrees of hardness and depth of tint. Then, there is the long-established *Conté*, or *French crayon*, which may be employed as a pencil, or applied with a stump, made of leather, paper, or cork; *Tinted crayons*, covered with paper, reed, or wood, which serve with much effect for memoranda of color, light and shadow, etc. Japanned boxes of *Water-Colors*, either in dry or moist cakes, are much esteemed by sketchers, and are found very convenient. They may be held on the thumb of the left hand, as a palette; while in the same hand may be also held, on an emergency, a card of Bristol-board, or stout paper, to receive the sketch, leaving the right free. Of *Paper*, we may have every variety of tint and texture, either mounted in blocks, or, better still for the sketcher, if cut into cards of a convenient size. There are, also, the *French Sketching-boards*, prepared of variour tints, even with skies and suggestive effects ready laid in. They are so prepared as to present an agreeable working surface for either pencil, crayon, or stump; and, at the same time, sharp lights and touches may be recovered, by scraping or rubbing up the under preparation. On these, colored crayons may be employed with much effect.



Paper is generally in a condition to work on when purchased. A little practical experience will direct in selection. For the studio, and careful out-door drawings, it is better that it should be stretched on light drawing-boards.

To stretch paper on an ordinary drawing-board, it should be damped with a wet cloth or sponge, on both sides, with as little friction as possible. Let it remain for a few minutes, that the water may be thoroughly absorbed; which may be assisted, by rolling it up, and laying it aside, for a short time, in a situation not exposed to heat or air. Have ready some strong paste, glue, or gum-arabic, thoroughly dissolved in water; the last is most convenient, as it may be kept, always at hand, in powder, and prepared in a few moments. Lay the damp paper on the board, and run a border of either of these adhesives evenly around it, with a brush, to the width of a quarter to half an inch, more or less, according to the size of the sheet. Carefully turn the paper over, and lay it evenly on the board, taking care that it adheres firmly on the edges; place it, face

to the wall, to dry slowly, and you will have, to repay the little trouble it has cost, a tempting surface for your best effort. Several sheets may be thus mounted on one board at the same time, by cutting each one a little larger than another, so as to leave a margin for the glue on each, say, of one third of an inch all around. After being damped, as directed, lay them down evenly, one over the other, so that each sheet may have a sufficient margin exposed to receive the glue, over all of which it may be passed at once. Be particularly careful that all the sheets are of an equal degree of dampness, and that their adhesion to the board is certain. Over all place a damp, not wet, cloth; and, when the whole becomes thoroughly dry, they will be found as serviceable as if mounted singly.



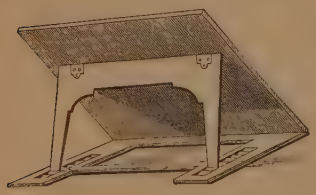
Drawing-boards may be bought of every variety of contrivance; but, after all, there has been little improvement, as far as practical value is to be considered, from the simple, well-seasoned, old-fashioned board.

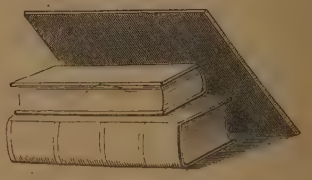
Paper, put up in what are called "*Solid Sketching-blocks*," containing a number of sheets secured together by the edges, and bound up as a portfolio, will be found convenient for pen, pencil, and crayon sketches and drawings: they are not, however, always reliable for water-tints.

For charcoal, crayon, and washed drawings, particularly those on a large scale, commonly called "*Cartoons*," the paper may be stretched in the manner directed by substituting a straining-frame and canvas cloth for the drawing-board. Paper of a delicate gray or drab half-tint is generally preferred in such cases. Formerly it was necessary to paste several sheets of paper together for large cartoons; but we can now procure it of any required length, and five or six feet wide. Although tinted paper in many cases may be the best to employ, white may be often used with great advantage, by rubbing it over carefully with a preparation of scraped crayon and pumace-powder, both very fine, with a pellet of cotton-wool, or some such substance, until a flat and even tint, of the desired depth, is obtained. On this the crayon will be found to take readily, and the fullest amount of force of which it is capable may be obtained, while by a judicious employment of points, or pencils, of stale bread, or, still better, of the recently-invented combination of Indian-rubber and pumace, the white paper may be either entirely recovered for the highest lights, or in gradations, with admirable effect. This method will be found to work better, if a faint but careful outline has been secured, by the pen, on the white paper, previous to the application of the half-tint.

To suit the convenience of the amateur, more than to supply any absolute necessity of the artist—who soon learns, in the more absorbing impulses of his art, to hold such matters in very partial estimation—the shops afford every variety of artists' fixtures that can be well imagined.

The readiness of the age, in the invention of labor-saving contrivances, has surfeited art with gimcrackeries in many ways far more injurious to its interests than by supplying it liberally, as it has done, with tools and materials. These may have often the good effect of inciting trial, and in the end leading to the surer means of reliance. Thus, the drawing which may have been produced upon the most nicely-contrived board and desk, folding up so cunningly and conveniently, capable of being elevated or depressed at will—an ornament even to the parlor-table—compared against the one that





a bit of plank and a couple of books have served as well, may develop a secret, worth knowing, to more than two rivals in the art.

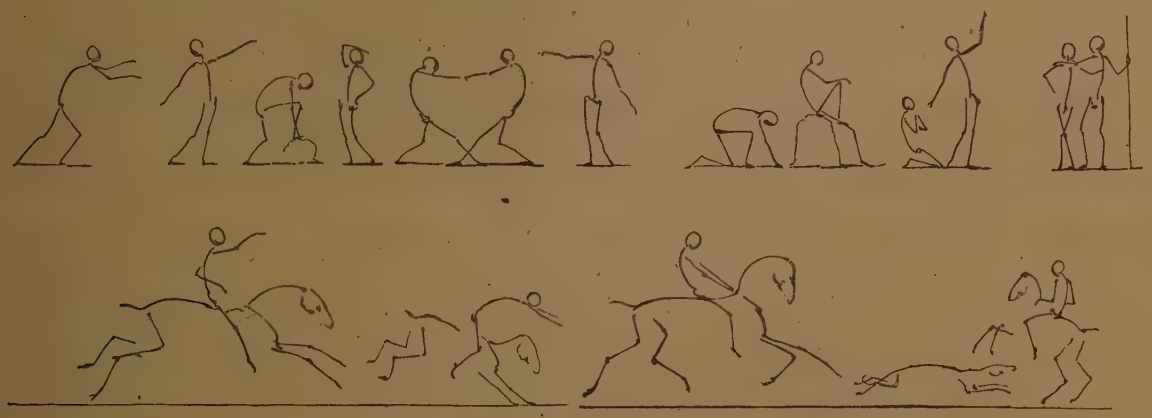
22. After all that has been said upon the subject, and earnestly as we have endeavored to impress the learner with an understanding of the nature, requirement, and value, of Studies, many may feel disappointed that more definite and practical directions have not been given; that no novelties, in the way of easy methods, have been suggested, to relieve the exaction of exertion on their part; that still, as ever, such exertion has been insisted upon, as the only means by which excellence is attainable. To expect to learn the ways of art by the mere reading of a book, is to reckon upon an illusion. All that verbal instruction can do, is, to indicate a course to be pursued; to afford the learner the benefit of the experience of others: the rest must be achieved by the exertion of his own intelligence and hand. There is scarcely a page, preceding this, that does not bear in some way upon the subject of study of nature. To repeat what has been already said would be paying a poor compliment to those who have given proper attention thereto; and such as have not, could scarcely be expected to derive benefit therefrom, at a period when, it is to be presumed, the learner has passed the ordeal of elementary study, and is qualified to assume the position of an artist, and fully prepared for the comprehension of all that has been said with regard to Studies, as well as that which may follow in relation to Sketches.

23. The leading requisite in sketching is to produce the nearest approach to intelligible expression by the most simple and direct means—to strike at once the motive and most prominent features of a subject, and to express them with certainty and decision. How little will suffice to do this is often surprising.

It will be seen, that, in the expression of action in figures, the skeleton gives, at once, the most marked and simple lines that can possibly be employed. Cover it with muscles, or drapery,

as we may, the key to the expression of its motive lies there, however faintly it may be indicated.

These examples, simple as they may be, will be sufficient to explain our meaning, which the learner can further and profitably exemplify for himself; observing, that the skeleton gives but



general action, and proportions, or rather divisions. For individuality of character and expression he must be aided by the model, or the store of observation and study, which the memory, or, to use another term, the imagination, may supply.

Among the many advantages of designing upon the basis of the skeleton, there is one of much practical value. The parts of a figure, which may be covered by the general outline, or out of sight, by reason of its intervention, or by

that of other figures, or objects, falling in their just positions, and according with its action and proportions, leaves no uncertainty in defining the position of as much of such parts as may be seen. This, some of the examples just given, small as they are, will sufficiently show. There never should be a doubt as to the disposition of any part of a figure, whether seen or not.

24. It is a profitable exercise, after having drawn a figure in one view, to reverse it, as if seen from the other side, without changing either its action or general character; and even to endeavor to make views of it from various points. How much more easily this may be done than may be at first imagined, a few careful practical experiments will prove. He who can, from an impression on his mind, or slight suggestion of the action of a figure, express it in any point of view, without a model, has certainly passed no insignificant period of advancement toward the highest privilege and capacity of an artist. It is by no means to be understood that we would convey an idea that there are no other means by which the action or motive of a figure may be expressed; nor that, in all cases, a preliminary indication of the skeleton is absolutely necessary. It is, nevertheless, very certain that, whatever be the visible lines employed, they should in all respects accord with it. Unless the artist have a distinct comprehension of its general and governing action and bearing on the outline, as well in regulating its proportions as in directing its action — unless he can distinctly recognise and be able to define it, both in the model and in his design — his efforts must be always feeble and experimental. He may make occasional lucky hits; but he who trusts to chance for success in art, plays but an uncertain game, creditless at best, even though he may sometimes win.

25. As the skeleton is to the living figure, so in their practical application, in an artistic sense, are their skeletons to inanimate objects. A landscape may have its skeleton, so far as such may be available to the sketcher — a tree — a building — anything. For, although correctness of outline may be the ultimate object, the surest way to secure it is by means of its skeleton, or main lines of construction.

26. Whatever degree of reliance, however, may be placed upon their skeletons, as the basis of delineating the proportions and action of objects, individuality of character and sentiment are more effectively and intelligibly expressed by outline. In the sketches of skilful artists, the power of a few apparently unstudied lines and touches seems sometimes almost magical; and the student may profitably trace therein the evidences of superior knowledge, whence such simple means derive their efficiency.

BY RAPHAEL.

REMBRANDT

BERGHEM.

SALVATOR ROSA

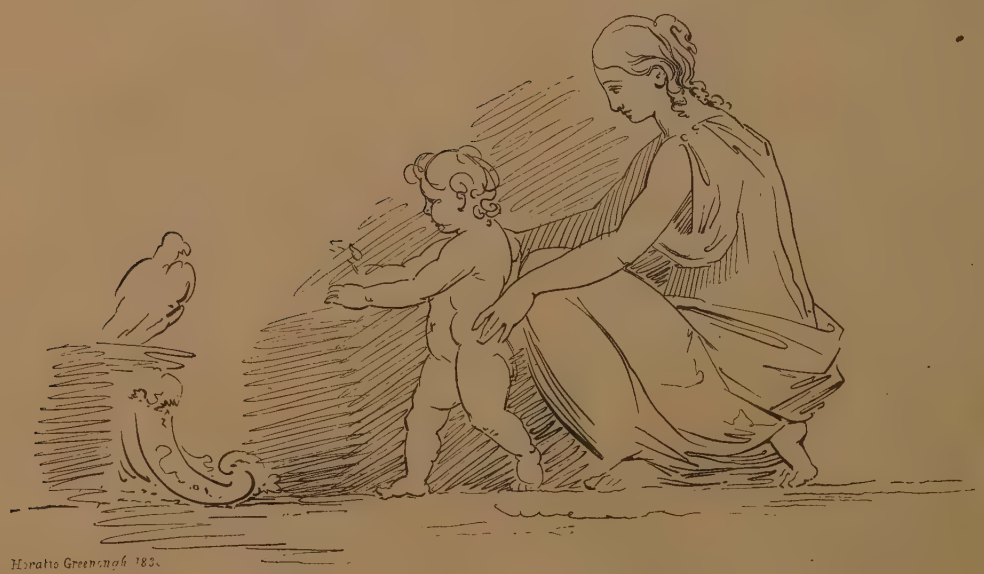
L. DEGHUY
PAUL POTTER

Callot Del.

WASHINGTON ALSTON

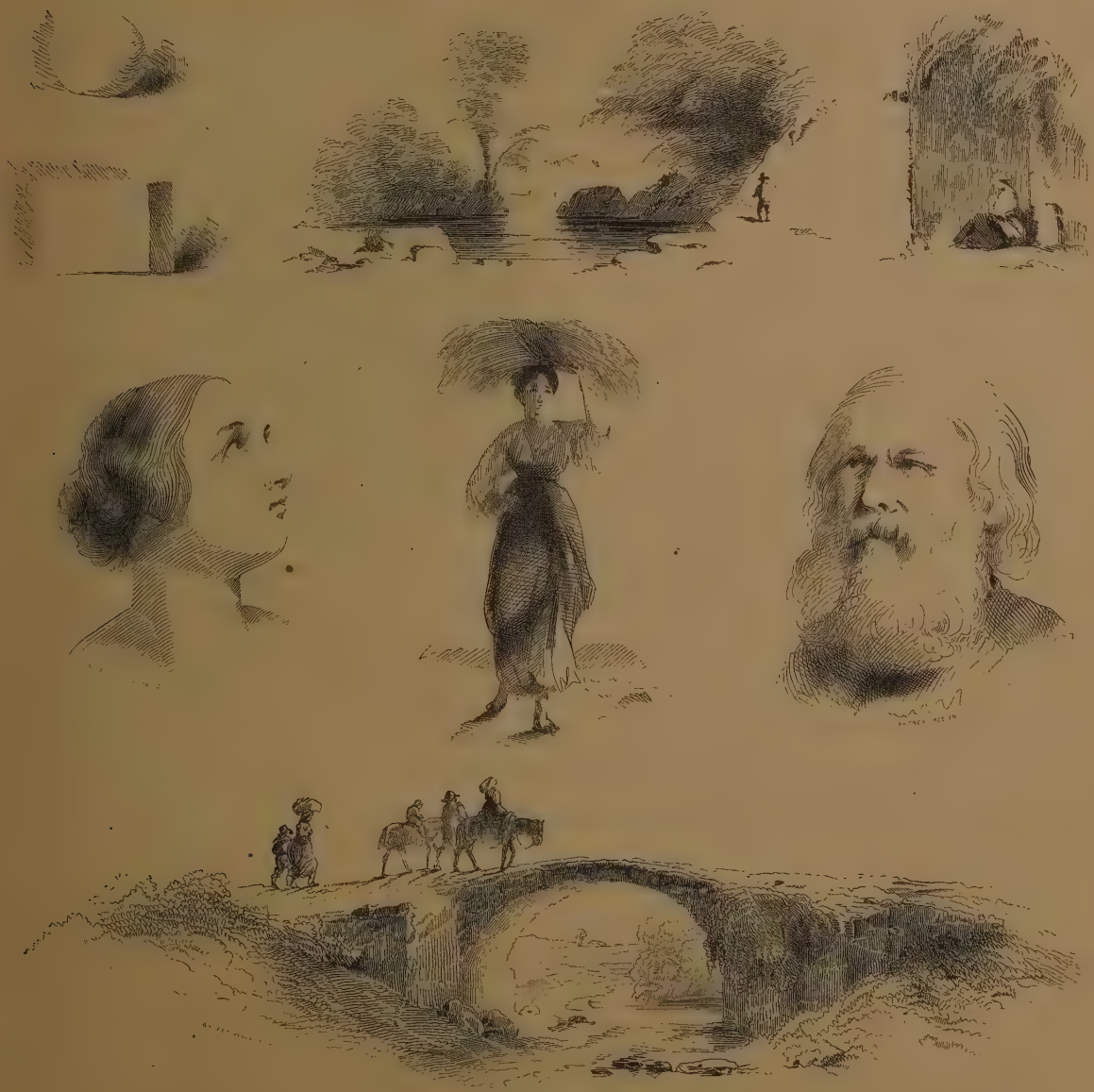
(Copied by permission of S E Perkins, Esq. from the collection of Mr. Alston's sketches, published by that gentleman Boston 1851.)

FROM A SKETCH BY JARVIS.



Horatio Greenough 183-

27. Not only the general effect of a subject, but much of its character and action, may be often rapidly and happily expressed by simple indications of its masses of light and shadow—and this, too, with an apparent disregard to precision of outline or detail, which, in the evidence of masterly and successful direction of purpose, and unaffected simplicity of means employed, leave no requirement of apology for deficiency in these respects. An effort of art which accomplishes all that it evidently attempts, may well deserve exemption from critical censure.



28. In the application of this method of sketching by masses, tinted paper will be generally found to be most serviceable. On such, not only the pen, crayon, and black-lead pencil, may be employed, but a further advantage may be gained, not only in the way of expedition of execution, but also in effectiveness, by the additional use of white, either chalk or liquid white (called Chinese or constant white), which will flow from the pen, or may be touched or washed on with a camel's-hair pencil.

29. In drawing on tinted paper, if the original tint of the paper be sufficient to bear out effectively touches or gradations of light, white chalk or constant white may be advantageously employed. Or, in either case, whether the paper be white or tinted, the general tint may be increased over the whole, or in parts, by means of a stump, a bit of rag or soft paper, a pellet of cotton, or even the finger, charged with pencil or crayon dust, and the lights may be recovered with Indian-rubber, etc., or by the application of liquid white. This may be done, either upon the basis of a pen-and-ink or other firm indication of the composition of the subject; or, the general effect of light and shade may be first secured, and thereon the required force and finish may be given. Or, all the various expedients which practice may suggest may be advantageously employed together in securing the nearest possible approach to truth of which the circumstances of the slightest memorandum, sketch, or more finished work, may allow.

30. The advantageous employment of tinted papers is not only available in sketching, but also in the most finished drawings and studies. For many considerations they may be preferable in all cases, where color is not a principal object. In drawing from plaster-casts, and in academic studies, they are almost universally adopted. The prevailing tint should correspond as nearly as possible to the half-tint of the subject, leaving the gradations of the shadows to be expressed by the pencil, crayon, pen, etc., and the lighter parts to be worked out with white; the latter to be used sparingly, and generally to be applied as a completing operation.

31. It not unfrequently may occur that the sketcher, with all his forethought, may not be prepared, with even the most simple conveniences, at the moment of their requirement. Still he should suffer nothing to escape him; and, for his purpose, the rudest slip of paper, the back of a letter, may be made to serve—anything that will receive a mark. We have known artists, on an emergency, sketch on their thumb-nail.

Recourse may be frequently had even to written notes and short-hand observations, which, although unintelligible to others, may be of invaluable assistance to the artist's memory in recalling impressions; however insignificant such rude sketches may appear, they often prove suggestive of the most finished and successful productions.

32. No means that can be efficiently employed, in availing ourselves of the suggestions of Nature on the imagination, should be disregarded. A memorandum of an effect of light may be secured, so as to be perfectly intelligible to the sketcher himself—and available for practical purposes, by expressing touches or masses of light by bold and decided indications thereof—if colored chalk or some such expedient is not at hand—even *in black*, where no more ready materials than white paper and pen and pencil are at our disposal, and time or circumstances may not allow recourse to more obviously effective means.

33. It should not be imagined that, in suggesting means, methods, or materials, for drawing or sketching, we desire to bias the learner's inclination by arbitrary directions. All practical artists have their own peculiar methods of expressing themselves, and that which is most ready and manageable in meeting individual or circumstantial requirements will be found always to be the best.

The perfect freedom and efficiency with which the masters of art employed any available means of graphic expression, which chance or occasion presented, would be more wonderful if the secret of their excellence could not be distinctly traced to higher qualifications than dexterous management of any one or more materials. Their sketches and drawings bear evidence how little reliance they placed upon mere method. Many defy the closest investigation to discover how, or with what materials, they have been executed. The black-lead pencil, chalks of every variety of tint and character, charcoal, dry colors, and even clay, may be detected, rubbed on with the finger or applied—it is hard to say in what manner—pencilling and stumping over pen-lines, and pen-lines and even washed tints over pencilling—all accidental combinations and suggestions made available with inimitable effectiveness, and the whole brought into subservience to the leading purpose of all art—truth and intelligibility. We may almost read, in the materials of many sketches and studies, the very circumstances under which they were produced.

34. The most faintly-expressed memoranda, often done in a moment, and under circumstances that would preclude the possibility of effecting more, not unfrequently secure the happiest suggestions. Impressions thus recorded may be recalled upon the memory, with a degree of distinctness almost incredible, which in all probability would be forgotten, and lost for ever, if something had not been thus secured, upon which to base their recovery. The facility with which we may acquire, by practice, a habit of thus striking at once upon the motive of a subject, will scarcely surprise us; and the best part of the advantage of a reliable method consists in knowing how we does it, and in being able to do it again.

35. To render such memoranda practically available to the artist, come the results of study and familiarity with nature, the knowledge held in store for the occasion. If more is required than he has at command, he refers back to Nature, seeks in her individualities assimilating inferences, or verifications of conclusions. The strength of the student and the sketcher are thus most happily combined. If every impression presented to the mind, or vision, could be even thus faintly recorded; if the many precious records, thus secured, could be elaborated into more perfect works; if Art could thus be brought in closer connexion, in stronger sympathy with nature—it would be far more generally acknowledged and appreciated in its refining influences on the heart and mind.

36. Looking to results rather than to theories, and deriving our conclusions from knowledge of the course pursued by those who have attained excellence in the various departments of art rather than attempting the discovery of newer and better plans, we are led to believe that the advantages to be derived from the study of nature are best secured, after a certain degree of elementary training is insured, by directing such study to a definite purpose. In other words, the teachings of Nature serve us more effectually when the absolute necessity of her aid is forced upon us, and we go to her sensible of our wants, of her power to supply them, and knowing where and how to seek, and as well to appropriate them. Much valuable time is often wasted in ill-directed and comparatively profitless preparations, in making collections of what are miscalled *studies*. Portfolios on portfolios may be piled of gnarled stumps, rocks, and trees—of heads, limbs, and figures—bits of skies, and effects of light and shadow—all to little account. The thing, from practice, becoming comparatively easy, there is a tempting fascination in the occupation, an indulgence in a sort of agreeable idleness, a superficial trifling with nature, which, passing for industry, is apt to mislead from the higher aims of study. When studies are made with a view to definite appropriation, either as accessory, or suggestive, of more finished productions—when scattered fragments of the beautiful in Nature are made component parts of harmonious works of art, or sought for to

aid in their production—then do they become of real value, not only in themselves, as records of her truths, but in the knowledge and familiarity with her varied aspects and characteristics obtained in their research and gathering. Thus, also, are the inventive faculties most healthfully excited and strengthened; and more than this. It is only when our capacity is tested by at least an attempt at original production, when we venture on the great purpose of our art, and when our utmost ability is brought into action, that our real requirements become evident.

37. After all that may be said, as to method, in sketching or drawing from nature, there is one point which can not be too earnestly enforced, as absolutely necessary—not only to the artist in his more perfect works, but to the sketcher and student under all circumstances—and that is, a knowledge of the laws and practical application of Perspective.

Of all the sciences directly applicable to art, it is the only one which has been reduced to a certain and arbitrary system. Its service is so constantly in requisition by the artist, that the neglect of its acquirement would appear to be a degree of folly scarcely possible, did we not find many persisting in the experiment of doing without it, or satisfied with vague and general expressions of its principles.

The benefits of a knowledge of perspective extend beyond the certainty which it insures in linear accuracy of pictorial representations. Theoretically, as well as practically, it bears, more or less, upon all the great requisites of perfection in art.

38. In drawing a simple figure, it may appear not only difficult, but unnecessary, that all its lines should be brought to the test of strict perspective calculations; but, to do so with precision, or to place such figures in a group, or in proper relation to other objects, in perfect harmony therewith, would be still more difficult, if not impossible, without a knowledge of its general principles. Even in drawing or sketching a head, its rules must be borne in mind; for, however slightly the drawing of the features may be effected thereby, that they are so is sufficient to render its aid important.

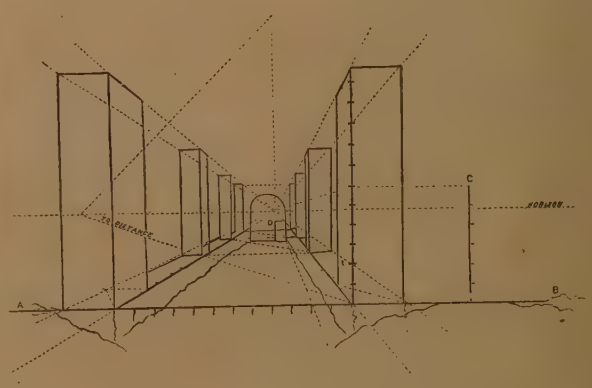
There is nothing upon which the eye can rest, whose image is not impressed upon that organ in accordance with the laws of perspective; therefore, nothing that art may attempt, which should not be in conformity thereto. Instead of restraining, its laws enlarge the privileges of the artist.

It matters not under what circumstances objects may be presented, we can, by the aid of perspective, select our own points of observation, even although they be imaginary. Thus violent and offensive exaggerations are brought by it to agreeable harmony, and the artist in a measure balances his account with Nature by presenting her under aspects and combinations which are to

the uninitiated that mysterious charm which often gives to the pictured representation an impression more favorable and striking than the reality.

39. It will frequently occur, in sketching and drawing from nature, that the artist can not place himself at the exact point for viewing his subject under the perspective influences in which it may be desirable to represent it. For example, let us suppose such an object upon a bold, upright cliff. On the side where it may be most desirable to make the drawing, there are but a few paces to the very edge of the cliff. Here the draughtsman may be able to examine, and draw, and make memoranda of the whole, with its details and minutiæ; but, if he were to attempt to draw it in the perspective in which he is compelled to see it, no one would recognise or accept it as a veritable representation. But, he imagines himself at a proper distance, as though he were on the deck of a vessel, or some rock placed there expressly for his convenience. He satisfies himself with regard to all the points, bearings, and proportions, of the objects, as though he saw them under such circumstances. He regulates the whole by his knowledge of the laws of perspective, as accurately as if he stood upon the very spot from which he desires it to be understood that the view is taken.

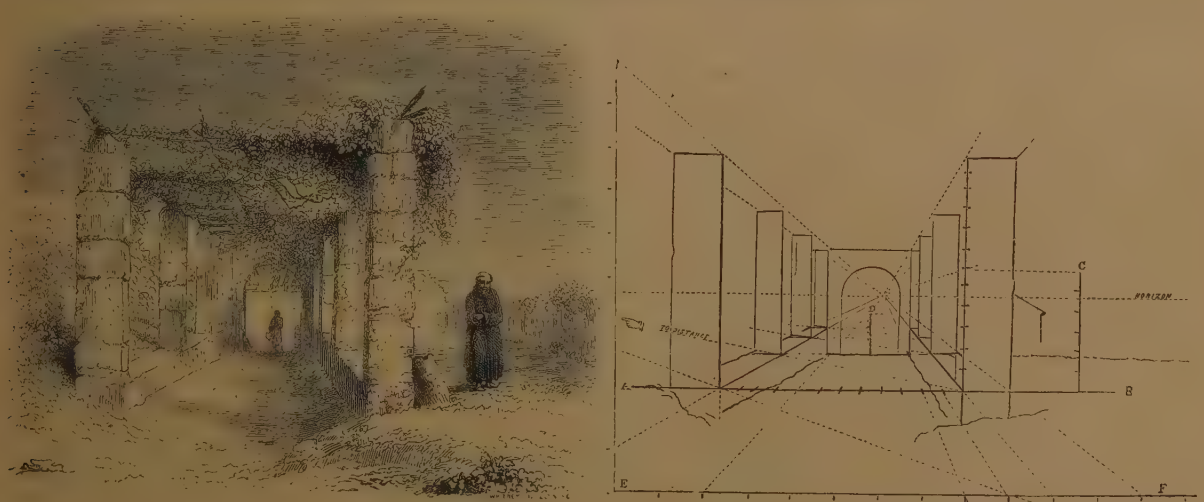
40. We know a vine-shaded convent-walk, to which it is almost impossible to have access, for the purpose of drawing it, from a point more distant than about *ten feet*. If we remove farther off, the greater part of it is shut out, or interrupted, by trees and shrubbery. To make a sketch, or drawing, at this limited distance, precisely as it is seen, would not only strain the rules of perspective beyond all justifiable exaction, but would present false and misleading impressions of the reality. Still, for the sake of exemplification, let us make the attempt.



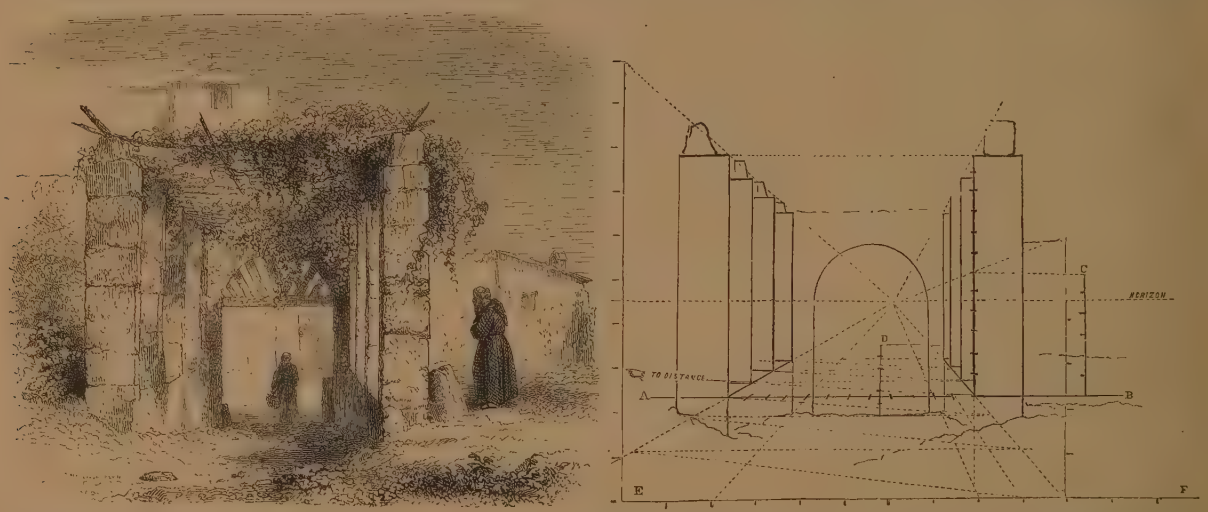
To show the nature of the violations of propriety in attempting perspective operations upon the premises of so short a *distance*, we give the perspective plan upon which the sketch is based, which will sufficiently direct the student to their discovery.

As *ten* feet is the distance to the first two square pillars, or stone supporters of the vine, it is evident that we can introduce nothing which is nearer, within the limits of the picture. These pillars are all *twelve* feet high, *twelve* feet apart (measured from their centres), and the space between the walls on each side of the walk is *twelve* feet. The top of the wall running with the base of the pillars is perfectly horizontal. The ground is irregular, and slopes downward toward the gate; after which it is level. We have, for the sake of clearer illustration, placed a monk occupying a position even with the first two pillars, and consequently just within the picture; and another, in shadow, immediately under the gateway. The real distance, therefore, between these two figures (as well as between the nearest side of the first two pillars and the gateway), is about *thirty-six* feet. How far from of a correct impression of such distance, and consequently of the relative proportions of all intervening objects, the sketch presents, is evident.

Let us make another trial. Let us assume a more remote *point of distance*, and regulate the positions and proportions of the objects, perspectively, in accordance therewith; although we may not be able to see the objects in our picture as they would appear at such a distance. Let us give the distance we had in the first instance to the picture, and make up a foreground from the very shrubs at our feet. To this point we thus extend the picture, and on it establish our *base line* E F. (This gives us a scale of proportions on such base line of *four feet to the inch.*) We now imagine ourselves *twelve* feet farther back, from the spot where we actually stand—and take that as a *distance for our picture*, nearly equal to its whole width.



We have evidently still not enough *distance* to meet the requisition of the eye. The perspective is still inconsistent with the size of the sketch, and the eye refuses to admit any impression of it at the limited distance of scarcely *two and a half inches*, at which it requires to be viewed to bring it within its range. In the case of the first sketch, it is utterly impossible that the eye could have received it as a whole, and scarcely less so in the second. It would naturally have sought relief by seeking various points of sight, and have satisfied itself by a number of perspective pictures. Art, therefore, which can only present *one picture*, and *one point of sight*, at the same time, must select a point of distance in its representations, to meet the natural and easy range of vision (chapter v., 65). Let us assume such a point, and that at a distance of *nine* inches for the sketch, which, according to its scale, would be equivalent to *thirty-six* feet in nature, and which,



although somewhat less than three times the width of the sketch, may be allowable, in consideration of the unimportant character of the objects in the foreground and at the sides.

To preserve the height of the two nearest pillars, and that of the nearer monk, the same in the three sketches, we have a space in the third sketch, from the positions they occupy to the base line, nearly equal to that between the two monks. It should be further observed, that, from the irregularity of the ground, very little if any of the shrubbery, indicated in the foreground, extends as far forward, in the picture, as the perspective base line.

With the three sketches, and the actual proportions of the distances and relations of the objects to one another, we leave the student to form his own conclusions, as well as to decide how far truth has been violated therein, by perspectively representing objects, not exactly as we are compelled to see them in nature, but as they might be seen, and as they may be allowably appropriated to the purposes of art.

41. We have given the perspective calculations, or diagrams, of each of these sketches, precisely as they were made for our own immediate purposes, and not as elaborated geometrical drawings. They show how little is really required, as premises for drawing or sketching, upon a defined perspective arrangement of a subject.

In most cases where elaborate perspective calculations and drawings are required, either as premises for pictures, or verification of their perspective accuracy, it may be often advisable to make them on transparent, or tracing paper, rather than directly on the paper or canvas, etc., destined to receive the finished work. Such geometrical drawings, whether required for direction in the arrangement of the picture, or at any time during its progress, may be readily adjusted to a proper position; and either the whole design, or any portion, drawn thereon with a pencil, may be at the same time repeated, or *calqued*, in its proper place, by means of a sheet or piece of tissue-paper placed between the tracing-paper and that of the picture—the tissue-paper being previously rubbed over, on the side next the picture, with powdered plumbago, or the scrapings of a soft pencil or crayon. Thus we have, for future reference and corrections, which may frequently be found necessary in the progress of our work, both a perspective and an outline drawing, and, by laying either one or both over our picture, we can at any moment test a suspected deviation from propriety. In adjusting these tracings, drawing-pins or bits of wax may be employed. Thus many inconveniences may be obviated, and a necessity of scoring our picture with lines avoided.

42. One of the greatest difficulties experienced in the management of perspective drawings arises from working-distances and vanishing-points extending beyond the limits of a picture. A very efficient rule has been given (chapter vi., 68), to obviate this difficulty; but even that may not be always practicable. The exercise of a little ingenuity, however, will rarely leave the artist at a loss for an expedient.

In the first place, we know to a certainty the position of the *horizon* of our subject: that, of course, must be within the limits of the picture. So must be the *point of sight*. For our *point of distance*, therefore, we have but to extend our line of the horizon from the point of sight to the limits of such distance. This may be readily done, for example, if we are in our studio, by attaching a thread to any object—say a chair—by a tack or pin, at a point corresponding to the line of the horizon of our picture (as it stands upon the easel), and removing the chair to the distance required—carefully observing that, when the thread is stretched against the picture, it falls exactly over the horizon-line. A thread, thus adjusted, will be found to answer every purpose of lines seeking the point of distance. If we desire to indicate any such lines on the picture, we can do

so very readily by chalking the thread, and rapping it against the picture, precisely as a carpenter uses his chalk-line. Vanishing-points which may fall out of the limits of the picture may be managed in the same manner.

It is frequently desirable, in the progress of a work, to recover certain perspective lines and points which may have become obliterated, or worked out of place; and, to this end, a thread will be generally found most serviceable, as it can be applied even over moist oil-colors, without injury. Where we merely require the guidance of a horizontal line, a fine thread, stretched in its place, obviates all necessity for erasures, and can at any time be renewed. For this purpose, the points on the edge of the picture, where such line falls, should always be preserved. If a necessity for the recovery of a vanishing-point is likely to be of frequent recurrence—as, for instance, in a landscape with buildings, or in architectural subjects—the picture, if on canvas, may be even pierced at such point with a fine needle, and a thread passed through, for the purpose, without injury—a touch of color, when it is no longer required, being sufficient to obliterate every trace of it.

In making out perspective drawings, on paper stretched on a board or table, much time may be saved, and accuracy insured, by fixing fine needles at the points of sight, principal vanishing-points, distance, etc.

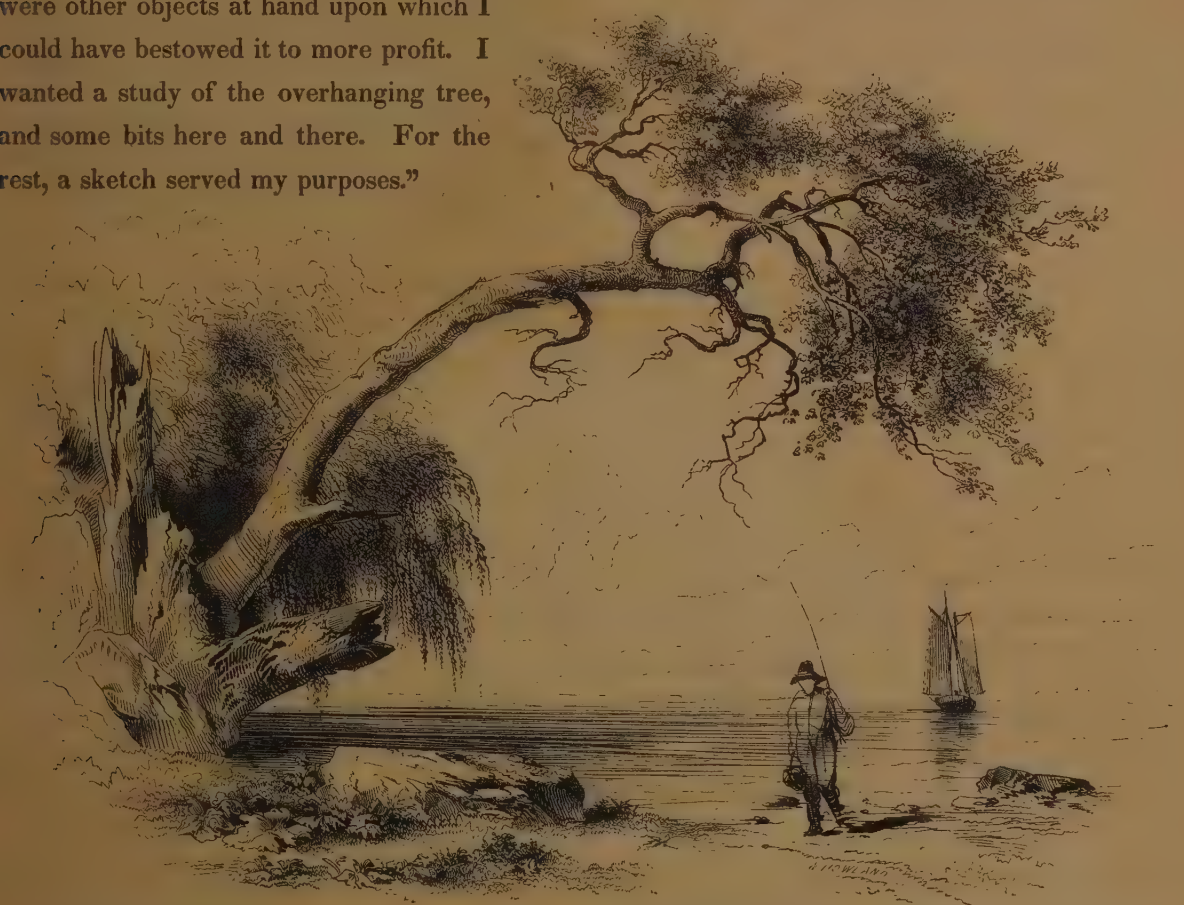
These few, of many other expedients which might be suggested, have been given in the hope that they may tend to do away with the dread, which too many have, of encountering "the worry of perspective"—without which they may rest assured that no one ever yet went far successfully in art, and that no one ever will.

43. There are many cases in which it may be required that the sketcher should employ a sort of short-hand method of securing memoranda, which may be afterward elaborated quite as well, if not better, under more convenient circumstances. Thus, in sketching buildings, it may be enough to indicate the general forms and proportions, and, instead of laboring over details, which may be often repeated in the same subject, to elaborate such details in bits here and there—or perhaps on a larger scale, at the foot of the sketch, or on another piece of paper. Instead of drawing in with equal care and precision all the windows, doors, cornices, etc., of a building, it may be sufficient to mark their position and number, and to finish carefully one of each.

44. In sketching views, it very frequently occurs that we are obliged to get in the general effect and composition on a scale so small that, when we come to its details, it is almost impossible to express them with the distinctness which may be desirable. In such cases, it is always better

to secure a generalized indication of the whole, and then to make separate memoranda of the most marked individual parts which we may desire as assistants in afterward making out a more complete work.

45. There are many expedients to which the sketcher is compelled to have recourse in order to secure the greatest amount of material or memoranda, which to a certain extent may be even allowable in a study. Thus in the following, which we give as nearly as possible in fac-simile from a working study and sketch by a practical artist. It is certainly in parts something more than a mere sketch; it is far from being perfect as a study; neither can it be considered a picture. In answer to the question of its character, we can not give a better explanation than in the words of the artist: "I had not time to make a study of the whole. If it had been at my disposal, there were other objects at hand upon which I could have bestowed it to more profit. I wanted a study of the overhanging tree, and some bits here and there. For the rest, a sketch served my purposes."



46. It is advisable that all sketches, studies, or memoranda, made in the presence of our model, however unfinished they may be, should be as little as possible worked over afterward—as much

that is valuable and suggestive in them may be thus lost. They should be considered as materials for the production of pictures—not in themselves pictures.

47. Sketches and studies are more or less intrinsically valuable, apart from the profit derived from their production, as they are more or less reliable records and available material by which more

complete works may be suggested, combined, and perfected. Hence, the more faithful they are, the better; not only in the preservation of the general characteristics of their subject, but also, as far as possible, of their individual peculiarities. The student should be diffident of premature assumption of capacity to correct Nature. It is no beginner's prerogative. The first essays of his strength in this particular should not be ventured upon too confidently. There will be found much to learn before he can form for himself a standard of ideal beauty and perfection. He must "learn to correct Nature by herself—her imperfect by her more perfect." By knowledge thus gained of what is general and what is individual—what are accidental differences, and what are prevailing characteristics—his mind will gradually expand to a just comprehension of the attributes of beauty. He will then know how to discriminate—how to separate that which is particular and uncommon, deviations from the prevailing perfection of Nature which constitute deformity—and how to combine his conclusions to a safe standard.

48. Sir Joshua Reynolds, alluding to the error too commonly prevalent among students, of not drawing exactly from the living models which they have before them, and of endeavoring "to make a drawing rather of what they think the figure ought to be, than of what it appears," justly remarks: "I have thought this the obstacle that has stopped the progress of many young men of real genius; and I very much doubt whether a habit of drawing correctly what we see will not give a proportionable power of drawing correctly what we imagine. He who endeavors to copy nicely the figure before him, not only acquires a habit of exactness and precision, but is continually advancing in his knowledge of the human figure; and though he seems, to superficial observers, to make a slower progress, he will be found at last capable of adding (without running into capricious wildness) that grace and beauty which is necessary to be given to his more finished works, and which can not be got by the moderns, as it was not acquired by the ancients, but by an attentive and well-compared study of the human form." These remarks apply with equal force to every object of study in Nature, as well as to that of the human figure.

49. It can scarcely be expected of us to supply the many and various progressive requirements of the art-student, in branches of knowledge of which he may feel the necessity, or the subject of Anatomy, especially that of the human figure, would have been earlier presented to consideration.

However important, indeed absolutely necessary, a certain amount of anatomical knowledge may be to the artist, there can be no question that its acquirement may be more profitably secured by progressive study, based upon that of the living model, than by reliance upon books. Even the advantages of dissection may be very questionable, unless practised at a period of advancement by

which we are qualified to seek with definite purpose, fully conscious of the nature of our requirements, and capable of rightly appropriating such advantages.

50. There are few, even among most indifferent observers, who can not detect imperfection in a limb or figure in Nature, and as few comparatively who know that a man's skull is not all in one piece, and that his great-toe has one bone less than the others. If, therefore, those who make it no special business to observe or investigate, so readily reach conclusions, why may not the artist venture upon the delineation of the human, or any other living form, without the profound knowledge of the surgeon or naturalist? A smattering of anatomical knowledge prematurely acquired may even lead to injurious tendencies, as we have often had occasion to remark by the vain attempts of young aspirants to *build a figure* instead of *drawing it*. The reproof of Fuseli to a youth whom he detected in trying to make out the beautiful and delicate markings on the side of the Apollo, by counting the ribs, is worth remembering: "You need not count them, young man; they don't cost anything."

Let none imagine that proficiency in anatomical science, as required by the artist, is to be gained by learning by rote its technicalities. It may sound very learned to talk like a surgeon, but it helps very little to capacity in drawing the figure, unless based upon a knowledge of the effect of its internal structure upon its outward form, which can only be acquired by the study of living nature.

All that we could possibly say on the subject of Anatomy, or present in illustration, may be so readily obtained from other works, in many amplified to an extent meeting the utmost requirement which books are capable of affording, that we consider it scarcely necessary to engross the pages to which we are limited by matter which may be found elsewhere quite as well if not better supplied.

We would desire, however, earnestly to impress upon the student the importance of a familiarity and knowledge of the structure, proportions, and action, of the skeleton (23), not only in its general characteristics, but as well in all its details. Comparatively few, to meet whose requirements of practical direction in the elementary principles of art our work is intended, may require to extend their anatomical studies to the degree necessary to the more aspiring artist; yet all, to be able to draw the figure with any degree of truth and readiness, must make themselves familiar with the skeleton, and learn to recognise and understand its influence on exterior forms.

51. Where access can be obtained to a well-arranged natural skeleton carefully put together by means of artificial hinges, springs, etc., thus uniting all the parts in their proper places, and allowing each its just movement, great advantages may be derived from its study. No school

where drawing is properly taught should be without one, as well as approved plaster casts of complete anatomical figures and detailed parts in various actions.

Repulsive as it may be to be thus brought into familiar contact with the evidences of "what we are, and must be," we can not be made the worse for it. Indeed, it is a subject worthy of serious consideration if a certain amount of knowledge of the structure of the human frame should not constitute a part of popular education. He who at least understands the general principles upon which the watch he carries is constructed, knows how to guard it better from accident or injury; and many a broken bone, or dislocated joint, might be avoided, as well as the precious gift of health and vigor preserved, if men were more familiar with the machinery of their own wonderful structure.

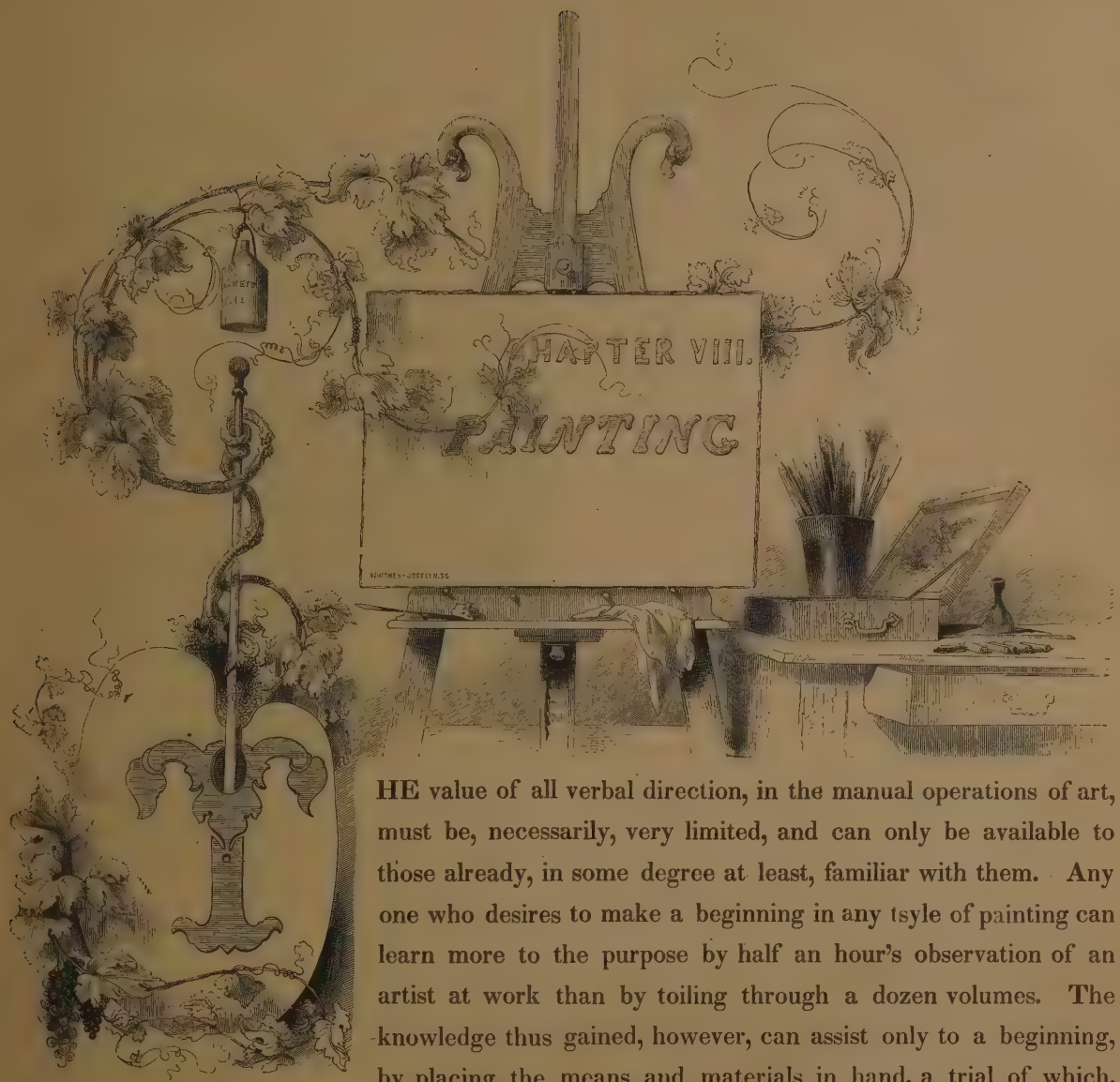
52. To attempt to analyze the means and exemplify the process by which ideal creations become as it were tangible to the imitative privileges of the artist, would lead to a more extended discussion than we can spare from more important practical matter. Were it at our disposal, it could be shown that the linear delineation of a subject, or idea, impressed upon the imagination, differs far less than is generally supposed from that suggested by a material model. As far back as the first chapter it has been said that "he who can draw nothing but what he sees before him loses the best half of the art." Before the learner had been presumed to have exceeded a very moderate proficiency in drawing the most simple straight lines, and objects formed thereby, the cultivation of capacity to this end was in view. However it may even offend the pride of the aspirant to the high privilege of testing his genius in the ideal to tell him that he must learn to draw —first a straight line by memory, and then a curved one—a block—a box—a table—and such like—he will find it to be true. If he can do so already, he has secured a safe beginning; if he can not—if his memory and hand will not sustain him in such simple requirement—how little can they be relied upon to meet with promptness the endless demands for more complicated forms which invention in design requires?

The mind must be indeed barren that does not follow a narration of an event or the expression of an idea with a pictured conception. The artist at least identifies his very presence with it, feels that he is there, if not a participator in its action. To give expression, by means of design, to such impressions, may be called invention, but it is in truth little more than the producing of new combinations, available in the degree to which memory may supply from the material world means and power of giving expression to the ideal.

Rarely, if ever, does the imagination act without impulse or suggestion—"nothing can come of nothing"—and we hail as genius the ability of seizing at once upon such suggestions, expanding

them to perfection, and giving them intelligible expression. Thus may the germ be often lost in the matured fruit, but without it it would have no existence. Equally stamped with the peculiarities of its own nature, marked with what we recognise as originality, may be the productions of genius; but that originality consists more in the peculiar action or direction of already-acquired ideas in new combinations, than in any spontaneous exercise of a mysterious and peculiar gift.

53. That from such resources, and by such means, as we have endeavored to point out, the most successful artists, whose career we can trace, achieved their excellence, there can be little doubt. They used no dead language to express their ideas. They sought its very alphabet in the book of Nature; the living, breathing Nature with which they were surrounded; the Nature that those to whom they addressed themselves could understand. The art of others they tried by her standard, and appropriated, so far as they considered it consistent therewith. Hence have originated the national characteristics of schools of art. Hence their success at home—their failure as exotics, when forced against national sympathies. Hence may we look with hope for the establishment and success of an American school of art—a school harmonizing with the Nature whence it must derive suggestion and material, as well as one that will meet the national sympathy and requirement to which it equally gives impulse.



THE value of all verbal direction, in the manual operations of art, must be, necessarily, very limited, and can only be available to those already, in some degree at least, familiar with them. Any one who desires to make a beginning in any style of painting can learn more to the purpose by half an hour's observation of an artist at work than by toiling through a dozen volumes. The knowledge thus gained, however, can assist only to a beginning, by placing the means and materials in hand, a trial of which, once made, however unsuccessful, the work is commenced — a step is taken; the next must lead to progress, and then books and verbal instruction may become of real service. The main reliance, in seeking the development of the power, capacity, and nature of the materials, as well as in maturing the hand and judgment in their proper application, must nevertheless be placed in the lessons to be derived from practical experience. In this respect, the advice which has been given, in reference to linear operations, is equally applicable to painting, as to all the processes, means, and

methods, employed in the imitative arts. Be contented with small beginnings, rather than rashly venture; and let ambition be restrained to the measure of your strength to bear you through successfully. Endeavor to keep within the range of possibilities. Allow not restlessness of spirit at the slowness of your progress, or the appearance of difficulties, which will constantly present themselves, induce despair, nor let partial success lead to too high expectation. The way to excellence, if long, need not be wearisome, or painful; for the reward and satisfaction of results accomplished, however imperfectly, may be realized at every step.

2. In no department of art are the advantages and happy influences of a well-balanced and progressive growth of judgment and capacity of hand, keeping pace with one another, better exemplified than in the acquirement of a command of the resources of the palette. Feeble as may be the efforts of the beginner, he should bear in mind that he holds in his hand the means of measuring his strength with the highest degree of attainment yet reached in art, or of rivalry with Nature in her perfected beauty, and keep a bold heart and steady purpose. Although slower in reaching maturity of excellence than may be desired, or consistent with the inclinations of many, and more dependent upon the influences of certain natural faculties than the linear imitation of mere forms, yet none need despair of acquiring a degree of efficiency therein, which will amply repay whatever amount of pains may be bestowed.

3. There can be no reason why the learner should not make an essay in the use of colors as soon as his impulses and desires may direct thereto. However true it may be, that many are often led astray by the fascination of color, to the neglect of drawing, and studies less engaging, yet it does not follow that such should be the case. Injurious consequences are only to be apprehended where there is a want of that right spirit, that love of truth and excellence, without which it is hopeless ever to expect more than mediocrity in artistic attainment. Facility of drawing may be as readily gained by the use of the Brush as the Crayon. Its power of expression is certainly greater, as well as its means of reaching satisfactory results; the value of which, in stimulating and encouraging the learner, deserves consideration. It is of no use to wait until he has mastered, as preliminary, all the accomplishments of a finished draughtsman, the rules of perspective, and theories of light and shadow; until he possess a perfect understanding of the machinery of the human figure and its anatomical expression; with the various other adjunct qualifications which, in a greater or less degree, may become necessary for him. Nor is there any reason that, as soon as he takes the brush in hand, he should discard the pen or pencil. On the contrary, they may thus become more than ever available. Many, in commencing to learn to draw, may have this

ultimate purpose in view, and therefore the sooner they make a beginning the better; thus early placing themselves in the way of acquiring familiarity and practical command of their materials, which is no single day's or year's work to obtain. We seek not to burden ourselves with provision for a journey through a land abounding with plenty, which may be had for the pains of gathering on our way. Why should it be required, in an art so abundant in resources? or why should the faculties be injuriously overtasked, or their energies repressed, in preparations against future exigencies—thus sapping and dissipating their vital strength in painful labors, prematurely exacted, and inefficiently applied, in the attainment of qualifications that would come in their own good time by an easier way?

4. It is useless for the beginner to harass himself about the nicer processes of painting, or to expect at once to command the resources possessed by the more experienced. The surest way for him, at first, is to seek to get all he can by the most simple and direct methods. When he is able to do something without the nicer and more complicated applications of the pigments, he will have secured a reliable basis for the better understanding of their use and value. If his first attempts are directed to copying, the selection of the subject, or model, should be of the most simple kind, and produced in the most simple manner. Let him, before he begins, study it well. All that has been said, in the previous chapter, in relation to the error of being in too great a hurry to get on with a drawing, is even more forcibly applicable to painting. Nor is this caution less requisite for the more advanced than the mere beginner—for the copyist from art, or for the imitator of nature—and equally to be regarded in the highest efforts of invention and imagination: for, although the palpable, tangible model may not in such cases exist, beyond the impression on the mind of the artist, it should be there, as clearly impressed, and as capable of receiving all the refining action of his judgment and knowledge in its translation into a more real shape. Thus will it become with a mind rightly trained in the pure truths of nature and art, and familiar with the sympathies that exist between them—a work of time and study, often of pains and labor; yet come it will, if sought with earnestness, developing by degrees the worth and reality of its possession, and ever cheering onward in its pursuit.

5. It is not only in the use and application of colors that practice is so much to be relied upon, but also in the acquirement of capacity for seeing and judging of them rightly in nature. It is thus that the many and various delicately-marked gradations of tints, their local value, their individual and relative strength, become evident—another reason that the work should be set about early. In this respect, as in many others, learners may often find their progress less rapid than their

desires, and feel discouraged on that account. They may imagine, too, as they stand by the easel of the artist, who has spent perhaps the best part of a life in daily practice, and familiarity with his materials, that there is a knack about his management of them, an apparent freedom with which he subjects them to his will—the result of some hidden secret which he possesses. They may come to him, in the simplicity of their conception of the means of artistic acquirement, and tell him "they have taken lessons in drawing for three months, and that all they want now is to know *how to lay on the colors.*" If he tell them "it is only *now* that he is beginning to learn something about them himself"—after having grown gray, perhaps, in the constant pursuit of that knowledge—he, possibly, gets for his honest confession the credit of a jealous churl, or selfish miser of the cunning he possesses, which they unwillingly believe him incapable of imparting by a word.

6. Fortunately, the capital required in an outfit for painting amounts to little. The day has passed away of color-boys and canvas-preparers, encumbering the artist's studio, as our well-supplied shops furnish everything that a beginner will find necessary. Skimming pots of boiling oil, at the risk of setting the house on fire, filtering varnishes, calcining ochres, and wasting time in preparing mixtures and grounds, is no business for him now. It is all very right and proper that he should know how such things are done, so that, upon an emergency, he may be able to help himself; but all this sort of knowledge will come in better time.

7. The methods and materials of the great masters in painting were unquestionably most simple. We may read a great deal about Venetian canvas, absorbent and non-absorbent grounds, of pigments and oils, vehicles and varnishes, all to little real profit, until we are capable of estimating the value of such discussions by practical knowledge. A close observation of the works of those who have reached the highest excellence in the use of colors, distinctly shows rather a triumph over, than subjection to, arbitrary rules of method. Many, it is true, may have indulged in experimental explorations and favorite peculiarities, of either material or process, but almost invariably has the longest and best-tested experience resulted in the adoption of the most simple.

8. He who seeks the surest means of acquiring knowledge of the nature of, and skill in the use of colors, must look beyond the arcana of color-shops and the crucible. He must learn the value, power, and command of the palette by its use—by testing it with nature, and the candid observation and investigation of the productions of others. Let him not imagine, because an artist may have produced a great and successful work on some particular ground, or by certain colors, or oils, or mediums, not accessible to himself, that his case is hopeless. Others may have done as well,

or perhaps better, without either. Why may not he? We have at this day a far greater range in choice of pigments than the great masters of color ever possessed — how much the better for art, we may profitably ask ourselves. There is but one question worth consideration with regard to either color, ground, medium or method? Is it permanent, and reliable? If so, it is enough to know of it, and after that to know how to employ it to the best advantage. If Titian were living in our day, he could find abundant materials in any village color-shop, or house-painter's drawer, in our land, with the aid of a piece of brown sheeting, or a well-seasoned board, to set the quackery of the world to wondering. The secret of excellence in color, as in all art, lies in the soul, the eye, and the hand, of the artist. It defies the resisting or diverting influences of circumstantial difficulties, and will find shape and utterance by any means it may select, or be compelled to employ.

9. Painting in Oil-Colors deserves precedence of all other methods, not only as most efficient in the imitation of Nature, but as that by which a comprehension of the general principles of application of color to design may be most directly and easily acquired. Were this opinion based upon mere theoretical reasoning, and not upon results of practical proof, we might feel less confident than we do in recommending it as the best method of painting for a beginner.

The consistency of colors, as they are generally sold, in tubes or bladders, is about as they should be employed; and the fault, so common to beginners, especially with such as have previously dabbled a little in water-colors — a propensity to render them more fluid, by the addition of more oil — should be avoided. This habit of quackery with the colors often arises from a disposition to seek sources of difficulty in their management anywhere rather than in our own weakness; and when they do not work, under the brush, as we desire, or imagine they should do, they are dosed with oil, spirits of turpentine, megilp, varnish, and one vehicle or another, into a most deplorable state. It is therefore the safest course to let the oils, etc., alone, as much as possible, and, where a necessity of mixing more oil with the colors may occur, to effect it with the knife on the palette. It may be taken as a reliable precept, that color, in a condition that it will not stand on the palette, which is held almost horizontally, can scarcely be in a state to transfer to a picture placed nearly perpendicular on the easel. The habit which impels to this killing doctoring of colors is apt, also, before we are aware of it, to fill the hand to inconvenience with brushes and pencils. It may be

taken as a certain sign that a painter is getting into trouble when we find his hand thus encumbered, and we see him ransacking his drawer for this tool and that, to help him out. Against the acquirement of these time-wasting and spirit-vexing vices, the surest safeguards are early-induced habits of forethought, order, and neatness. It is only in apology that examples of carelessness of many professional artists in this respect can be cited.

10. The Palette should be as light as possible, easy to the hand, and especially to the thumb, upon which it may at first press uncomfortably. It may be made of mahogany, walnut, holly, maple, or any other hard wood. A palette of a medium size, about twelve inches in length, and nine in width, will be found the best to begin with. Its selection, with regard to the character of wood of which it is made, its color, shape, etc., is much a matter of caprice; and the kind first used is that most likely to be afterward preferred and retained. Like many other artistic conveniences, it is only by use and trial that we know what we really want; and, therefore, it is better to supply such wants gradually, than to be unnecessarily encumbered with a great variety of tools and fixtures. The palette should always be cleansed, after use, with oil, or spirits of turpentine. An old, well-kept, and well-treated palette, becomes in time as valued as the cheering face of a tried and familiar friend.

11. Brushes and Pencils should be selected according to the requirements of the artist. A few at first will be sufficient. Bristle-brushes are best for laying in large masses. Sable pencils serve better for sharper and more decided touches. Pencils and brushes made of goat's hair will be found very convenient, especially where it is desired to lay on a strong body of color. It is a common error with beginners to use too small brushes and pencils. A large, full brush, makes clearer work, preserves the tints in greater purity, and, with practice, will generally be found most serviceable.

A word of caution may not here be out of place against the use, or rather the abuse, of ***Softners***, as they are called, and ***Badger-tools***, which, however they may be well employed, are often sadly misapplied in reducing the picture to a flat and spiritless smoothness, in the mistaken judgment of many, thus attempting to produce an effect of finish: as if the finish of a picture consisted in giving a superficial polish to its surface like a tea-tray! The absurdity of giving to all objects, flesh, draperies, flowers, sky, water, foliage, architecture, etc., the same texture, would seem too palpable to require comment, did it not so much prevail as to mislead the inexperienced into vices of manner, against which they should be cautioned. Colors should be tortured as little as possible on the canvas, and these ***Blenders***, ***Softners***, or ***Sweetners***, often prove the veriest instruments of

mischief, in unskilful hands, that could be well devised. Beginners may be safely advised to let them alone — at least, to learn what to do with them, by first learning to do without them.

Brushes and pencils are best cleansed with tepid water and soap, which should be always done after use. When circumstances prevent this, they should be laid in oil until they can be attended to. Spirit of turpentine injures both brushes and pencils, as it renders the bristles and hair brittle. Artists sometimes lay their brushes in olive or lamp oil, and rinse them out carefully in spirit of turpentine, or linseed-oil, before again using them. Both lamp and olive oil, however, are dangerous to have about, lest, by some oversight or carelessness, a brush should be used without being perfectly free from them; or by some means or other they should get mixed with the colors, and the ruin of a picture be the consequence.

12. Easels are found at the shops, of every variety of shape, material, and contrivance, from the most simple combination, of three strips, connected at the top by hinges, with holes and pegs to support the picture, to the most elaborate conveniences, with spring-catches, shelves, drawers, etc. A good easel is a luxury in which the amateur, as well as the artist, may be well allowed to indulge. All annoyances and inconveniences arising from bad materials, tools, or fixtures, should be provided against, especially for beginners, as they will find quite enough to occupy all their thought and engross their attention in their work. Where this useful piece of artistic furniture can not be had ready made, the ingenuity of any village carpenter can be found equal to supply the requirement.

13. In painting, and, when practicable, in drawing, a standing position is most to be recommended. In very minute and delicate operations it is almost impossible, however, to preserve, in a standing position, that steadiness of hand which may be required; but, even then, a seat or stool sufficiently high to bring the hand and eye on the same level that they would occupy if standing, will be found most convenient. Thus we may not only prevent fatigue, by occasionally relieving our position, but be able more readily to view the progress of our work at a proper distance — a matter of more importance than may at first appear. Although necessarily obliged to be near our picture, in its execution, the effect to be produced when viewed at its proper distance should never be absent from the mind. In this respect, the remarks which have been made in the chapter on Perspective, previously given (page 146), will be found equally applicable to its general character-

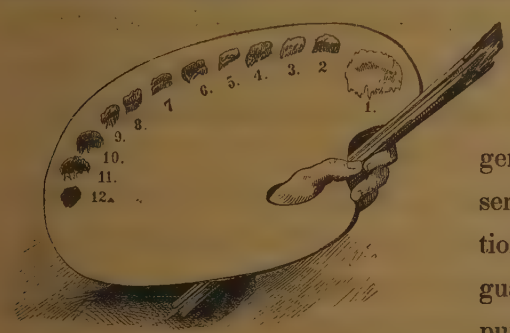
istics as to its perspective arrangement. It is evident that, in a picture calculated to be viewed at a distance of nine inches, a greater degree of delicacy and elaboration in its execution, a disguise of the handling of the artist, and traces of his brush, are requisite, than in one destined to be seen at as many feet. As bolder subjects, on larger surfaces, are attempted, a relative degree of bolder handling, masses and effects, are required.

14. Vain as it may be to offer fixed rules with regard to the formation of style, or manner of execution in painting, these hints may be useful. The errors arising from a want of proper adaptation of manner of treatment to the size and subject of a work, are evident in the feebleness which is found in works by artists who, having been accustomed to treat smaller productions with extreme delicacy, attempt larger, by the same methods. On the other hand, those who may have been most successful in the management of bolder subjects, in smaller works, requiring greater delicacy of touch and neatness of handling than they can command, rarely satisfy the eye, when necessarily brought in closer and more minute examination of their mechanical execution. That which might be a small and finished *picture*, is received and valued only as a spirited *sketch*, in the one case; while, in the other, the extreme delicacy of treatment, which gave perfection to a smaller work, becomes feebleness and imbecility in the vain attempt of its adaptation to a larger and bolder production.

15. The Light, for painting in oil, to avoid reflections, and for other reasons, should be above the level of the eye, and, when practicable, fall on the left side; as, among other considerations, we can thus have a better view of the contents of our palette, and be less likely to experience inconvenience from the shadow of the person and right arm. Still, it will constantly occur, when painting after a model, that this position can not be preserved. Trial and experience will readily suggest means of obviating such inconvenience. Few, comparatively, for whom these directions are intended, may be able to possess the advantages of a well-arranged studio; but, there is no reason, on that account, why they should be deterred from a trial and exercise of their skill in painting in oil. Any ordinary room may be made to answer the purpose, and all the better, if it have a high window, with a northern aspect, and a dark, neutral-tinted wall. A light facing the north is generally preferred and used by painters, as less variable, and less subject to the glare of the sun, although many consider a southern exposure more advantageous; in which case, a blind of tissue-paper, or muslin, is placed over it, in a manner that it may be removed in cloudy weather, or on other occasions.

16. The inculcations to neatness which have been urged with regard to the palette, etc., extend with equal force to all and every arrangement and operation of painting in oil. There is no reason that the process should in any way be attended with annoyance to others, or to ourselves, nor that amateurs, in the indulgence of their trial of it, should be driven to the garret and lumber-room. There is in its practice no just cause of terror to tidy housewives, nor mothers over-anxious about delicate hands and soiled dresses; and still less that the injurious effect of the "smell of paint" should be made a bugbear. Neither hands, dresses, nor health, need suffer in the business. The pigments in themselves are harmless, if kept to their right use and place. The daintiest fingers need not dread their contact, even if there was a requirement for it. The occupation, in itself, if rightly pursued, gives more healthful exercise, of both mind and body, than it is commonly credited with; and, tempting us, as it does, to the bright fields and free air of nature, with a rejoicing heart and glad step, leads to the very source of health. The practice of an art, as harmless as it is beautiful—refining in its influences upon the mind, developing and enlarging its resources of enjoyment and usefulness—is, in every respect, a far worthier occupation for the daughters and mothers of a land, boastful, as ours, of its enlightenment, than leaning over embroidering-frames, in the production of worsted slippers, lamp-mats, and other excuses for mental idleness and inactivity.

17. The learner, being now prepared with the necessary materials, and with such preliminary hints as have suggested themselves as most useful to him, may venture to take up his palette for a beginning. The arrangement of the colors here proposed should be considered in no way arbitrary, but such as has been found most convenient, and generally adopted by professional artists. It will be observed that they are so arranged as to preserve a gradation from light to dark, or from white to black—thus guarding against risk of injurious contact, preserving their purity, and forming an easy and agreeable scale to the eye, as well as for other considerations which will appear in the course of their employment. The colors now before us are such as will be found best adapted for a first attempt in painting a head. They are twelve in number—less would do. Rubens is said to have used very few colors. With White, Yellow Ochre, Ultramarine, Madder-lake, and Asphaltum, he produced all his tints, occasionally heightening them with Naples Yellow, Vermilion, and Black, and then only in certain portions of the draperies and accessories. If it were possible, the result of a still more simple



palette is observable in the best colorists of the Italian schools. Fewer even might suffice; but, with these every requirement may be supplied for some time to come, as it is better that familiarity with the more solid colors should be acquired, before meddling with others less easy of management. Many are the advantages to the learner of habituating himself to the employment of few colors. The strength of the palette does not consist in a variety of pigments. The fewer that are employed, the more easily are the suggestive accidents of their combinations remembered and recoverable. As he advances, he may venture to increase their number; but the result of almost all such experiments will be to bring him back more confidently to the simplicity of his beginning.

18. (1.) WHITE will be found occupying the most prominent position on the palette. It is generally placed at the head, because required in a larger quantity than the others, and, being heavy in itself, serves to keep an easier balance of the palette, besides being more accessible. *Kremlet's White*, sometimes passing under the name of *Silver White*, is most generally used. It has not the body of Flake White, or pure White Lead, but is considerably brighter than either. Its general acceptation among artists, all the world over, is the best evidence in its favor.

(2.) NAPLES YELLOW varies in its degree of intensity, as well as delicacy. The paler and more tender tint will be found best for flesh: and such as falls into a more lemon, and sometimes even brassy hue, may be better suited for landscape and other purposes. Although we have introduced this color to the learner, he should be cautioned in regard to its peculiar qualities. The chemical properties of Naples Yellow require, in both grinding and mixing it on the palette, that an ivory or horn knife should be employed instead of a steel one. It may be equally dangerous to combine it with other colors imperfectly prepared from iron; and, since the introduction of cadmium, it is so easily and comparatively cheaply imitated by mixtures, that it is rarely to be found of a pure quality.

(3.) YELLOW OCHRE, when pure, combines in flesh-tints in a most delightful and manageable manner, and, from its permanent and reliable character, may be regarded as invaluable. A little trial and use of this color will soon make it a favorite, and few palettes are seen without it. There are many varieties of the yellow ochres, under the names of Roman, Spanish, Egyptian, Golden, etc., varying in their intensity and degree of warmth. All the pure ochres, by the process of calcination, become darker and more red.

(4.) VENETIAN RED, or NAPLES RED (*Terra Rossa*), may both be considered standard pigments, and valuable for flesh-tints, as forming a carnation applicable under almost all circumstances. The former possesses more body, or intensity, the latter more delicacy. The great difficulty with regard to these colors is to procure them of uniform character and purity at the shops.

(5.) Vermilion (either *Chinese*, *French*, or *Dutch*, each of which varies in peculiarity of tint) is a dangerous color for beginners, as it requires much tempering, subduing, and reducing, to bring it into harmony, especially in delicate flesh-tints. Still, it may be made very valuable in heightening the brilliancy of carnations, etc. It should be touched with caution, and used sparingly, until capacity for its judicious management is attained by practice. To these might be added *Indian Red*, for its great value; but, like Vermilion, it is extremely difficult to manage. It is so intense, that a little goes very far in combination with other pigments; and if it once gets, as it were, the run of the palette, it is very apt to make its way all over it, and into every other tint, before we are aware of it—a difficulty likely to prove no slight embarrassment in unpractised and unskilful hands.

(6.) Raw Siena takes rank with yellow ochre for its general utility. It is found of various shades and degrees of intensity. It should be used with caution in the lighter or flesh tints, if at all.

(7.) Burnt Siena is a pigment of great value. When of good quality, it may be made to supply the place of many of the warmer lakes, whose doubtful character for permanency renders them always suspicious. There is scarcely another color, except white, that will be found so generally serviceable as Burnt Siena; and the sooner its acquaintance is made, and its power of service tested, the better.

(8 and 9.) Raw and Burnt Umber are both favorites with artists, although they have the reputation of turning darker in time—a peculiarity common, in a greater or less degree, to all the earths, particularly those which require a great deal of oil to render them of proper consistency in grinding and working. Both the Umbers are rapid driers.

(10.) Terra-Verde is of an olive hue, and, when combined with White, falls into a delicate pearly tint, which may be increased by Ultramarine Ashes, or Ultramarine, and is admirably suited for breaking into and cooling the carnations, or in forming half-tints or shadows, by slight additions of Venetian or Naples Red, or Burnt Siena.

(11.) Ultramarine, either the pure preparation from Lapis-Lazuli (which, on account of its high price, is always difficult to procure, and hence subject to adulteration), or its recently-discovered substitute, French and German Ultramarine, is rarely required to be used in painting flesh, except sparingly. The Ultramarine Ashes serve better, and are invaluable, not only in painting flesh, but in almost everything else where a delicate, cool tint is required. The preparations of *Cobalt Blues* are esteemed and employed by many artists. The *French* and *German Ultramarines* are much used by landscape-painters. They are certainly safer to trust to the hands of a beginner than either *Prussian* or *Antwerp Blue*, as both, from their strength, especially the

former, are liable to lead into similar difficulties as those above alluded to with regard to Indain Red, besides being in other respects unmanageable.

(12.) Ivory Black. Intense blacks are seldom if ever required, especially in the early stages of a picture. In preparing a palette for painting flesh, the principal use of Ivory Black will be found in making out the grays and half-tints, where Ultramarine Ashes can not be procured. There is possibly no color the value and power of which require so much time and use, to become familiar with it, as Ivory Black; and the more we know of it, the more must it be appreciated. This black should be ground as fine as possible; otherwise, it is a very slow drier.

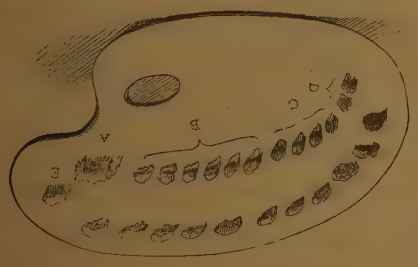
19. It is scarcely necessary to speak of the methods of grinding and preparing these colors, as they are found at the color-shops, put up in bladders, or (thanks to the admirable invention of our countryman Mr. Rand) in metallic tubes, in which they may be kept fresh for almost any length of time. There is one matter, however, which concerns all who have occasion for their use. More care should be bestowed upon the grinding of them than is generally done by colormen. The best qualities of many of the colors, such as the Sienas, Blacks, Cassel-Earth, or Vandyke Brown, and many others, are lost for want of proper grinding; besides, on that account, they are prevented from drying as readily as they should. If those who use them would make common cause in the matter, by exciting a competition among grinders and venders, the evil might soon be corrected. A small ground-glass slab and muller will always be found an acquisition to the artist's table. It may be frequently wanted for grinding small quantities of Lakes, Ultramarines, and other delicate colors, at a moment's requirement. The Lakes are all slow driers, and should be ground with Drying-Oil.

20. Having indicated a sufficient number of colors to the learner for a beginning — many more, indeed, than are absolutely necessary — the next thing to be done is to prepare, from them, such combinations as the general character of the model may suggest. Many artists rely entirely upon the brush, or pencil, in forming these combinations; but it requires a degree of expertness and familiarity, in such use of it, not to be expected in beginners and they may be safely advised against the attempt. It is far better that the tints for the general and principal masses should be prepared on the palette with the knife, trusting to the aid of the brush only in bringing them together on the canvas with as much clearness and precision as possible.

21. Let us suppose the model, whether it be a picture or *living head*, before us. The first important consideration is a decision upon the general character of the prevailing masses, receiving

the broadest effect of light, in which the local tints are most distinctly indicated. This should be made without immediate regard to the highest points of light, which, in most instances, if the light fall from above, will be found touching the most prominent part of the forehead, repeated still more decidedly upon the end of the nose, running in a more or less subdued tone along its ridge, and slightly marking prominent parts of the features in modified gradations. Having prepared this general tint on the palette, in a sufficient quantity, consider it as the basis upon which to make out whatever variety of tints may be required, without again having recourse to white, except for the higher lights, which should even then be very sparingly applied, and only after all the masses are well determined, and even laid in. Careful trial will show how much more directly and harmoniously, by such means, an approach to truth may be attained, than if for each tint separate combinations, based upon white, were employed. It is very desirable that this method of preparing compound tints on the palette should be perfectly understood. It will be found, not only to obviate many practical difficulties and embarrassments, invariably encountered in the beginning, but also to exert a happy influence in maturing the judgment, and in early training the eye to correctness and just appreciation of the local value, degree of subordination to one another, gradations and harmony of colors. It may be made, not only of practical value, but suggestive of theoretical truths, in the research of which the mind can not receive direction too early.

22. To explain the method more clearly. Let us suppose (A) a flesh-tint formed by a combination of White with Venetian or Naples Red, more or less increased in warmth by Yellow Ochre or Naples Yellow, according to the character of our model. From this, as a basis, we prepare a gradation of tints (B) by further increasing its intensity, as may be suggested by the study of the model. We next proceed to make combinations from these tints, by the addition of neutralizing colors, such as Ultramarine, Terra-verde, slight portions of Ivory Black, and sometimes Raw Umber, in small quantities, until we have a set of neutral tints (C). Thus, again, in like manner, may be formed the half-shade, and stronger shadow-tints (D), by a more liberal employment of the Umbers, Burnt Siena, and such like pigments—observing, always, that they be kept clear and removed from blackness; for there is no such thing as *blackness*, or *opacity* in flesh, under any circumstances. For the high lights, we may have equal recourse to the prevailing mass (A), from which our general carnation-tints have been prepared, by heightening its power. We have left this brightest light-tint to the last (E), because it is better that it should be reserved for the completing process, and then sparingly,



and cautiously, yet decidedly applied.—From a palette thus prepared the tints may be transferred to the canvas with a certainty and decision of touch, retaining them in their purity and clearness, with much greater command, than if their combinations were attempted entirely by the brush. We desire it to be distinctly understood that these directions are intended only for those who are making a beginning, and are as yet unpractised in the use of oil-colors. If we have succeeded in making our meaning intelligible, in relation to the preparation of a palette for painting a Head, the suggestion of its availability to all other subjects, modified and adapted to their peculiar requirements, will be sufficiently impressive to indicate to the learner its universal applicability.

23. Previous to the preparation of the palette, it is presumed that an accurately-indicated drawing of the subject has been made upon the canvas—upon which any amount of time and careful study that may be bestowed will be well applied, not only by securing this necessary basis of after-operations, but in making us familiar with the object of imitation before we take the colors in hand. Some artists trust to the brush, almost entirely, in modelling out their subjects; but its successful management involves a degree of facility and certainty of hand possessed by few. It is by no means a prevailing custom, even with the most experienced. Others, again, recommend a generalized indication of the subject in only two colors, such as Umber and White, or Gray; while some prefer warmer and more glowing preparations. Many give to each part of their picture such preparatory treatment as they may consider best suited to secure the results they desire to produce in finishing. This is what is called "*Dead Coloring*." All these, however, are niceties of process, the comprehension of which, either in their objects, practical application, or results, requires more knowledge than the learner can hope to attain by any other means than study, experience, and gradual acquirement.

24. Care should be observed, in beginning to lay on the tints, not to overload them. Into this error the inexperienced are very apt to fall. However desirable it may be to secure a solid body, or *impasta*, of color, it is better to effect it by degrees. The masses should be laid in first, leaving the high lights and darkest parts for the last. A little experience will show how much may be done by a few decided and studied touches after the previously-applied tints have become somewhat set, or tacky; and practice will soon teach what allowance to make, and what reserve to retain, for the purpose. Thus, for example, the clear and delicate carnations may be broken over half-tints, and even in shadows, with much effectiveness—the sky-tints, mingled with portions of the landscape, diffusing airiness, and giving the effect of distances, reflections heightened where necessary, and more prominent parts forced to their just degree of strength, without disturbing the

harmonious keeping of the whole. Much of the difficulty and disappointment experienced by beginners in the use of oil-colors might be saved if they would only exercise a proper degree of patience with their work, and not be too prodigal of their tints at first, daubing away, as they may be often observed to do, right and left, without purpose or meaning, as if there were nothing required beyond dispensing the material to the picture, and leaving it to make itself. When color is first applied to a smoothly-prepared canvas, or upon a previous painting, it does not adhere so firmly, nor is it in other respects as manageable, as it will become in the progress of the sitting. Thus, the last half-hour of a day's labor is, not unfrequently, the most valuable to the artist, and he should hold himself in readiness to take advantage of it.

25. Whatever objections may be urged against the method of painting "at once," or, as it is technically termed, "*a la prima*"—in which it is endeavored to accomplish as much as can be done at once, leaving as little as possible for an after-process—it is the safest for one as yet a novice in the use of color. Unsatisfactory as it may be in itself, as a method, and inadequate to more than a partial development of the resources of the palette, it is, nevertheless, a secure basis for progress. Let the learner bear this strongly impressed upon his mind: although recommended as the *best to adopt in the beginning*, *it must be regarded by no means as an ultimate aim*; for, by it, alone, the higher excellences of color are unattainable. When he may have become, by the practice of more simple methods, familiar with his materials, and have gained insight to the peculiar character of the pigments, with some degree of command over them, he may venture more safely. When he shall have learned to see things rightly, and to hold under his control the most available expedients of his art, in giving expression to his conclusions, a well-defined way to excellence lies fair and open before him, and success must more certainly attend his efforts than if he had involved himself in difficulties, in the beginning, for which he was unequal.

26. The professional artist may often feel inclined, perhaps, to call in question and debate opinions advanced upon the subject of method in the use of color—favorite, as it is, of all the themes of contention among theorists and abstractionists: but, once for all, let it be understood, that no desire of wordy combat has seduced us from an unpretending position to assume dictation in matters or methods of art; nor have we the presumption to claim any exclusive right to the field against such as possess better and easier means of making its ways accessible. The ambition of our design reaches not beyond securing to the learner a reliable starting-point. It was the impulse of our labors at the beginning; has ever been the leading purpose of their continuation;

and the hope of their being made available to others, in removing the most obvious difficulties that embarrass the way of its attainment, will cheer us to the end.

27. Whatever reliance may be placed on practice, in the development of the resources of the palette, and in directing their skilful application, there are many hints in regard to the use of oil-colors which may be useful to the learner even at the outset. First of all, in importance, he should be reminded that, by practice, more is meant than the mere covering of yards of canvas, which may be effected to very little profit, unless accompanied by constant investigation and study, and unless the results of such investigation and study are made directly available by trial and application.

28. Experience has proved that the color of the ground, or preparation, upon which pictures are painted, influences more or less their general tone, which becomes still more apparent by the action of time, in proportion as such influence has been more or less counteracted by a body of color. Thus, many of the works of Guido, thinly painted on a gray preparation, whatever they might have been when first produced, have become offensively cold; and the works of the Poussins, and others, deplorably dark and obscure, from their having employed a ground of a dark-red or brownish tint. Brilliancy and clearness of color are always best secured by progressing from light to dark; and, therefore, the best colorists generally, if not invariably, use a light ground, and lay in the preparation, or under-tints, lighter than those employed in finishing. By some, a method has been pursued of going over and over by repeated operations, gradually increasing their depth and force of color. Others paint and model out their subject, upon a slight preparation, with a strong body of color, or *impasta*; which, by a judicious use of driers, becoming slightly tacky in the process, admits of a very high degree of finish and elaboration, even at once: and, by repeatedly going over, or "glazing," as it is technically termed, the whole, or parts, with transparent colors afterward, more or less thinly applied, they increase the brilliancy of the tints—giving thereby transparency and force to the shadows, and bringing the whole to an agreeable and harmonious tone.

29. Glazing is a term generally used to express the passing of a darker, and usually-implied transparent color, over a lighter. Most of the colors employed as glazers are in themselves more or less transparent—such as yellow ochre, raw and burnt siena, ultramarine, all the lakes, asphaltum, etc. But all colors, except white, are capable of being used as glazers under certain circumstances, by giving them a degree of transparency, by the addition of a greater or less quantity of

drying-oil, or of boiled oil mixed with mastic varnish, or some other transparent vehicle. Thus treated, there is scarcely a color which may not be made to serve as a glazer; although, whenever it can be done, it is better to employ those possessing in themselves the qualification of transparency.

30. MEGILP is the name under which is generally known the combination of drying-oil and mastic varnish, to which allusion has just been made. It will be found, by mixing strong drying-oil and mastic varnish together, that they form a substance about the consistency of well-prepared colors—extremely transparent, agreeable under the brush, an admirable dryer, and, upon many considerations, a valuable accession to the palette. Its injudicious application has caused it to be regarded with suspicion, if not to be unjustly classed among nostrums to be avoided. In megilp, used with discretion, there is nothing to be dreaded. One very important point should never be lost sight of in the process of a picture. All its parts should be made to dry as equally as possible, and to this end such colors as are in themselves slow dryers should be assisted by some vehicle readily combining with the oils in which they are ground, and possessing in itself no injurious effect on them.

31. The employment of heterogeneous mixtures is in every way dangerous. ***One oil, or vehicle, should be used throughout a picture,*** as well with regard to the advantages derived from such a course in immediate results, as the action of time upon it. The fact is well authenticated, that some of the finest heads by Vandyke, and other distinguished portrait-painters, were painted up at once, apparently at one sitting. On close examination of such pictures, undeniable evidences of the employment of a strong drier are plainly discoverable. They are in many instances charged with color in a manner—maintaining the utmost purity of tint—one over the other, broken and blended—with a facility of management leaving little doubt of the nature of the vehicle employed in their execution. If an after-process has been resorted to, it has been in the employment of glazers, for the more perfect development of such parts as may have seemed to require greater force, and in reducing the whole to an agreeable and harmonious tone. Rarely, in this after, or completing process, can the use of opaque colors be detected, and, if at all, almost invariably with injurious consequences.

32. "LINSEED-OIL *is the best of all oil;* it even surpasses nut-oil, which is more fat, and that of the poppy-seed, which becomes so, and thickens." Thus said Vandyke, the pupil and favorite scholar of Rubens; one, above all others, most familiar with the practices and expedients of an

age prolific in great colorists; and whose works, at this day, bear testimony to the accuracy of his conclusions—sufficient in itself to secure its general and unquestionable acceptation. Equally strong evidence has been left to us in favor of *mastic-varnish*; and, as this preparation is still, as ever, the most generally-received and almost universally-adopted varnish, for bringing out and sustaining the results of the artist's work when completed, there can exist no just cause of fear in the employment of either, with such discretion as will be inculcated and impressed upon the learner by practice and experience. Linseed-oil and mastic-varnish may be considered adequate to all the requirements of a medium or vehicle for color—the former increased in its drying qualities in such degree as may be necessary, according to the circumstances under which it is to be employed, and the latter prepared in the most simple manner.*

33. The process of glazing having been sufficiently explained, that of *scumbling*, which is understood to be its opposite—that is, the passing of a thin layer of lighter over a darker tint—will be readily comprehended. As brilliancy and depth are the results of glazing, so less decision of local

* Although it may be seldom required for the artist to prepare drying-oil or varnish, it may be well that he should know an approved method of doing so.

For Drying-Oil.—Take, say, a *pint* of the purest linseed-oil—put it in an earthen *pipkin*, that will stand the action of heat, without risk of breaking. For this quantity, a pound of litharge, and an equal quantity in bulk (not in weight) of burnt umber, will be required. The latter must be crushed to small pieces, but not reduced to powder. The litharge and umber should then be tied up in one or more bags, made of old linen, and suspended in the oil so as not to touch either the sides or bottom of the pipkin. Place the whole over a slow charcoal-fire, not sufficiently strong to bring the oil to a boiling-heat, but as nearly as possible up to that point without reaching it. It must be kept to this until the rising to the surface of minute bubbles ceases (which may take from three to four hours), when the oil will have assumed a rich brownish tint. The bags, with their contents, are then to be taken out, and the fire suffered to go down gradually. When the extreme heat has somewhat subsided, a wineglassful of good copal-varnish, mixed with half a wineglass of spirits of turpentine, may be added. This must be done with caution, lest it take fire. If any appearance of smoke arises when the spirits of turpentine comes in contact with the oil, we may know that the oil is still too hot. If it is desired to increase the drying quality of the oil, a gentle heat may be continued for some time longer; but great care should be taken that it never be allowed to gain sufficient to crisp a feather dipped in it.

When oil, by the action of too great heat, or by taking fire, has assumed a dull greenish hue, it is worthless for the purposes of the palette. The small quantity of copal-varnish has a tendency to make it dry thoroughly, and to prevent the colors mixed with it, when loaded on the canvas, from being crimped or wrinkled.

It is recommended that the process be conducted, if possible, in the open air, as safest, and to avoid the disagreeable odor which will be thrown off in the earlier stage of the experiment.

The oil should be allowed to cool gradually, and to remain some days to settle; when it should be drawn off carefully, and kept in well-corked glass bottles. Thus treated, it will not only keep well for any length of time, but be improved thereby.

When a larger quantity is required, it will be only necessary to increase the proportions.

No iron, copper, or metal subject to be affected by vegetable acids, should be suffered to come in contact with the oil in the process.

Mastic-Varnish is prepared by dissolving *gum-mastic* in spirits of turpentine, or, better still, in the rectified spirit, or camphene. This may be effected by simply placing it in the sun, in a clear glass bottle, for several days—repeatedly shaking it until the mastic is dissolved. The varnish may then be drawn off carefully, or filtered through blotting-paper. When it is desired to hasten the process, crushed glass may be added—the particles of glass preventing the mastic from massing together, and assisting its dissolution by the turpentine. Varnish may be made more rapidly by placing the vessel which contains it in a sand-bath, or in another of boiling water; but, from the dangerous nature of turpentine, when brought within the reach of fire, under any circumstances, the inexperienced may be justly cautioned against venturing upon any experiment of the kind. As to the proportions of mastic and turpentine, the best method is, first to cover the quantity of gum with turpentine, and, after so much of it is dissolved as it will receive, to draw off the varnish. Then add more turpentine to the gum, and repeat the process. The stronger preparation will be found best for making megilp—the weaker for varnishing.

tint, and that peculiar effect of air and distance which may be desirable in preserving the aerial perspective of color in a picture, are often more readily attainable by scumbling. It should always, however, be resorted to with caution, lest opacity should be the consequence of its injudicious application. It may be received as a reliable principle, that, as far as possible, the whole process of a picture should be from light to dark. Even when the principal painting or modelling (of a head, for example) is effected at one sitting, it is better to begin with lighter local tints than may be desirable to use in finishing; and, no matter what degree of loading, or impasta of color, may be employed, not to start with too liberal use of it. Once having a well-secured preparation, however faintly, still accurately and decidedly indicated, we can then see more clearly what we have to do, and accomplish it in a more easy and masterly manner. However difficult the preservation of this gradual increase of the tints and tones of a picture may be, the principle holds good as a general and reliable rule. As a general rule, subject to exception, it should be regarded. Such exceptions, however, will be found rarely of necessary occurrence, and are allowable as available expedients, of which practical experience only can give command.

34. It is always safest to allow one layer of color to become thoroughly dry before another is applied over it. For this reason, a picture, especially in the earlier stages of its progress, can not be too freely exposed to the drying influences of both air and even sunshine. If any variation in the drying qualities of a medium be allowable, the stronger should rather be employed in the commencement than in the completion of a picture. Much, if not all, of the mischievous results of the injudicious employment of rapidly and firmly drying oils and varnishes, may be attributed to want of proper care and precaution in this respect. The cracking of a picture is caused by a premature hardening of color or varnish on the surface, while the body of the under-color still remains soft. A very heavy body of color may be laid on, at once, upon a well-dried under-preparation, with little risk, provided that, in its turn, becomes thoroughly hard, before another is applied over it. But if, while the first has only partially and superficially hardened, another coating be laid over it, combined with a more rapidly-drying oil, or vehicle, than that which is beneath, the outer layer will almost inevitably yield, in cracks, to the retarded desiccation of the lower. Years may even elapse before the development of the full extent of the mischief arising from such causes; for, it is long before the drying and hardening of an oil-painting is thoroughly complete. Hence arises the great importance of employing an equally firm and reliable oil, or medium for color, throughout a work; and that all dissimilar mixtures should be avoided. Observation of the best-preserved pictures, as well as corroborative documentary evidence of the methods employed in their production, place this truth beyond question.

For similar reasons, no other than a well-seasoned canvas should ever be trusted. We have seen a picture, begun upon a canvas, freshly prepared with a strong body of white lead and raw oil, irrecoverably cracked and ruined, in less than a week, after a layer of color combined with boiled oil and varnish had been applied. Upon a well-dried preparation no such effect would have resulted. If, instead of this preparation, composed of a body of white lead, ground in oil of a weak and flimsy character, such had been employed in tints for a picture, over which, in like manner, others had been laid with an oil or medium of a different and more drying nature, a similar result would have been the consequence.

35. On returning to work upon a picture, after it is once dry, it may be found that fresh color, especially if thinly laid on, does not readily adhere, but is apt to *creep*—like an oily substance applied to a damp surface, or like water on that which is greasy or highly polished. There are many ways of correcting this difficulty—such as rubbing it over with scraped potato, Indian meal and water, weak spirits, etc.; but, after all, there is nothing better than water applied with a soft cloth, or sponge, and carefully wiped off again. When the whole picture is not sufficiently dry to admit of this, merely breathing on the part upon which we desire to work answers as good purpose. This is also a safe and ready method of ascertaining if a picture be dry enough to work upon, without subjecting it to the touch; as the moisture of the breath, adhering to such parts alone as are dry, and being rejected by the undried oily surface, shows the state of the work, in this respect, with the utmost certainty.

36. After a picture has been laid aside for some time, on returning to work upon it, it may be extremely difficult to match the tints, if required to do so, and even if they appear to correspond at the moment, when those more recently applied in their turn become dry, they will be found to be out of harmony, unless proper allowance be made for their falling, or becoming darker, in drying—a matter extremely difficult to regulate, even by the most experienced.

Want of clearness almost invariably results from attempting to repeat a color, by laying it over its like; and a necessity for so doing should be guarded against, by proper forethought.

As a general rule, it is better that all after-tints should be warmer than those underneath, as greater brilliancy and clearness are thus more readily attainable; still, there are exceptions, of which the artist may often advantageously avail himself, and with the operation and effect of which he will become familiar by practice. Thus, for example, where the ground or preparation is white or gray, blues, especially in skies, and draperies, require something to bear up their extreme coldness, which may be better effected by a warmer under-tint than by mingling such tints with them.

either on the palette or by means of the brush; by which, unless managed with the utmost skill, their clearness may be seriously injured, and an offensively dull greenish or purplish hue be the result. By the other process, all the desired warmth may be given by the effect of the warmer under-preparation, without such injurious consequences—a requisite often of great importance, particularly in skies and the distant portions of landscape. As the learner, however, can scarcely be expected to be prepared at once for the discussion and comprehension of such matters of extreme nicety of process, it may be sufficient at this time to direct his attention to the subject, as one hereafter requiring investigation and study.

37. For other reasons than those alluded to (34), while undergoing the process of drying, a picture should have as much light and air as practicable, even to placing it in the clear sunshine. There need be no fear of such exposure; for, the work that will not stand such trial, will scarcely bear that of time. If there is to be any giving way, the sooner it is developed the better, and before it leaves the artist's hands. Even after it is completed, a painting in oil should not be excluded from the advantage of light, as it remains for a long time after subject to injury by such exclusion. The colors may recover their original purity by restoration to light and air, yet such treatment can certainly do them no good. Prevention is always better than cure. It is, therefore, a bad habit to turn pictures to the wall during the progress of their execution, as the effect upon the colors, however partial, may be sufficient to mislead, on returning to work upon them, and such parts as were first painted upon, afterward recovering their original character, may throw the whole out of keeping. As the process toward the permanent drying or hardening of a picture is slow, and often continued even for years after its completion—and, as it is never secure from the evil influence of exclusion from light and air until this takes place—it is proper that it should be equally fairly dealt by after it leaves the artist's hands. "If I knew that my picture was still at Antwerp," says Rubens, in a letter still extant, "I would cause it to be detained, and the case opened, in order to see if it is not spoiled, after having been so long shut up without air; and whether, as commonly happens to fresh colors (under such circumstances), it has not turned yellow, so as no longer to present in appearance what it was at first. The remedy, however, if it should happen to be in so bad a state, will be to place it several times in the sun, as the sun can dissipate the superfluity of the oil, which causes this alteration; and if, at any time, it should again become brown, it should be again exposed to the sun's rays, which are the only antidote for this disease of the heart." And again, in writing to Subtermans, in relation to his large picture, still in the Pitti palace at Florence: "I fear that a picture so large, rolled and boxed up, may very possibly cause discoloration in the tints, and particularly in the lights and flesh-tints;

then must I request you to have it exposed in the sun, at intervals, at such times as may be necessary for its recovery," etc.

38. Of Varnishing.—Some precaution is necessary in varnishing a picture. It is a commonly-received opinion that varnish should not be applied to a picture for some time after its completion, and even that it should be left for years before its application. Much depends upon the nature of the oils, or vehicles, which may have been employed. If strong dryers have been used—if the process of siccation has been properly looked to—especially, if slight portions of varnish have been used throughout the work—there can be little risk, and certainly many advantages, from its application, very shortly after the completion of the picture. The evil effects of early varnishing may be often seen in a picture in which different oils have been used, and in which all the parts were not in an equal degree of firmness at the time of its application. When a picture has been painted with slowly-drying oils, and varnish applied over it before it is thoroughly hard, which will take some time to effect, great risk must certainly be incurred by early varnishing—particularly if rapidly-drying or hard varnishes are employed—for reasons which have been already explained (34). If, on the contrary, strong driers, mingled with portions of the same varnish which may be ultimately applied to the picture, have been used throughout, little risk can be incurred. Pictures executed in this manner will be found to require very slight varnishing.

The relative virtues of the different kinds of varnishes have been often a subject of discussion among artists, each claiming pre-eminence for his favorite, yet leaving the question as undecided as that of the endless catalogue of vehicles, oils, gumptions, etc., which, with their day of caprice, or fashion, have passed away, and left the long-tried and simple Mastic-varnish in as favorable general acceptation now as ever. Whatever injurious consequences may result from its employment, they may be traced to other causes than inadequacy in itself to meet the requirements of a reliable varnish.

Previous to varnishing, the picture should be thoroughly cleansed, not only from dust, but of any greasiness that may often result from the use of impure oils, and other causes. This peculiar greasiness prevents a proper adhesion of the varnish, and may cause it to creep, and sometimes even to granulate in hardening, in a very injurious manner. An application of water, or a little weak spirits and water, generally obviates this difficulty. But, where there is suspicion, every precaution should be used. The scrapings of a potato rubbed over the picture, and afterward washed off with tepid water, may be strongly recommended; or a paste of Indian corn or bean meal and water, rubbed carefully over it with the hand, or with a soft cloth—observing to remove this in the same manner by washing, and in both cases to wipe the picture thoroughly dry, with

an old silk-handkerchief, or such like. It should then, to avoid all risk of moisture remaining, be placed in the sun, or at a moderate distance before a fire, for a few minutes; and, while still slightly warm, the varnish should be applied. If the varnish is itself warmed in like manner, it will flow the better.

In applying the varnish, the picture should be laid down, face upward, and every precaution used against dust or motes falling upon it. A broad and not too coarse-haired brush, should be employed. The varnish should be laid on as rapidly as possible—observing to finish as you go, and to avoid the necessity of retouching any part, after it has been once covered. Instead of transferring the varnish by the brush, from a cup to the picture, it is better to pour a small quantity directly from the bottle on a portion of the picture, and distribute it evenly thereon with the brush—again repeating the supply to another adjoining portion, in such quantities as may be perfectly and evenly distributed at once; carefully observing to unite it with that already applied, while it is yet fluid, so as to present an equal and perfect distribution throughout.

Varnish should neither be too strong, nor laid on in a quantity beyond that which may be required to bear out the colors of the picture, and give it an even surface.

39. There is no question of the fact that pictures, painted in oil, become more or less reduced in tone, or darkened, by time; and that much of the harmonious richness of tone of the productions of the great masters of color may be attributed to this action, or, more likely, that the simplicity and soundness of their methods divested them of all experimental quackery. Relying, as they did, upon plain and well-tested truths, time has sustained rather than impaired their excellences. Unless the stock, the substance, the reliable material, be there, however, time is more likely to prove a destroyer—as the countless cracked and faded, blackened and blotched productions of unskilful experimentalists, bear evidence. Time never yet gave strength to feebleness, nor made harmony of discord. Sometimes it may have improved an indifferent work, but it has been rather by obscuring defects than by developing beauties. One thing is very certain—if it has ever improved the color of a picture, it never yet corrected bad drawing.*

40. The unskilled are apt to imagine that brilliancy of color is to be attained by the use of bright and glaring pigments, and bestow, with an unsparing hand, their white and yellows, reds and blues—as painful to the eye as sounding words in discourse to the ear, and equally valueless and offensive. The language of Art should be gentle, eloquent, and intelligible, as that of Nature. In Nature, all is harmony. The hues of morning, and the golden tints of evening; the glowing

* "Se il Tempo dipinge, non ha mai disignato."—*Italian Proverb.*

sunshine falling in broad masses, or broken by passing clouds, upon the fields of summer, or the ice-bound streams and snows of winter; the pale moon, or glaring firelight, still and for ever are diffused harmoniously throughout the landscape. The imitative power of art is limited. To learn to mark and know its limits is the business of the artist. It is in vain to hope to reach a point in our scale of light and brilliancy beyond the power of the palette to produce. How far it falls short of an approach to that of sunshine, the glare of fire, or even the more subdued moonlight, it is useless to argue. Yet from such an available point must be marked the scale of our imitative resources; and, as we can go no higher, it only remains for us to meet the difficulty by reducing this scale in just subordination thereto. Our observation and study of detail in Nature, therefore, in reference to color as well as in regard to form, should be directed always with deference to her broad and general aspects, ever limiting our ambition to the possibilities of art. The book of Nature should be kept wide open, and constantly before us—the suggestive impulse to our art, and truest guide to excellence in all its ways. No abstract page, or sentence, torn out by chance, or idly selected here or there, should ever satisfy us.

41. With regard to the best objects of study for a beginner in the use of oil-colors, the copying of some simple subject—as a *Head, in profile*—a *Figure*, well defined, on a plain background—a *Landscape*, in which the effect is easy of imitation—a bit of *Still life*, and such like—may be recommended. If he can have access to studies by practical artists of such subjects, executed, as such generally are, in a direct, unaffected, and obvious manner, they will be found best adapted to his requirements. From these he may gradually indulge his ambition by attempting more complete and finished works, and, very soon, try his strength on similar subjects from nature; always endeavoring to imitate the subject before him with the utmost accuracy, and to seek a way of his own in so doing, rather than to follow the prescribed and often conventional methods of others.

He need never be at a loss for subjects. A cast of drapery—a pile of books, or other articles, upon his table—groups of fruit or flowers—the very weeds and plants which he may gather from the roadside, or paint upon the spot where they are growing—will prove models worthy of his utmost effort.

With the increase of capacity will come the increase of desire for closer intimacy with Nature, and love for her will only be shared by that for the art by which he is brought into privileged association with her.

Although the copying of pictures may be recommended, as a beginning, by which a certain requisite amount of facility in the use of the pigments may be gained, the learner can not be directed to Nature too soon; nor should he be restrained from his privilege of acquiring a way of

his own in discovering her excellences and expressing his conclusions. Thus, at the same tims, he learns the value of the art of others, and becomes better qualified to profit by its suggestions.

As the inclinations of a great portion of those, for whose benefit this work is designed, may tend to *Landscape-painting*, some few hints on the subject may be acceptable. To amateurs it offers inducements peculiarly adapted to the opportunities they possess for its indulgence; and, in a land like ours, abounding with so much of the beautiful in nature, the existence of so general an impulse thereto is no matter of surprise.

42. The first attempts of almost all beginners in landscape-painting are marked by an exaggeration of local colors. The individuality of tints, which they imagine that they discover in nature, they express too decidedly, and without that regard to the effect of aerial perspective which should be as accurately and carefully preserved as its linear proportions. To avoid this error, we would recommend that a landscape should be made out, as far as possible, with subdued tints, and that all the more violent pigments should be reserved for finishing. The effects of light and atmosphere are prerequisites in Landscape, and should be preserved with the utmost care. It is always easier to add force of local color to any part, where it may seem to be required, by thus preserving a harmonious keeping throughout, than to restore such harmony from discord. To this end, the beginner should not trust himself with any of the strong pigments, such as chrome and cadmium yellows, the bright greens, and such like. In Landscape, they are even more dangerous and unmanageable, by unskilful hands, than Vermilion and Prussian Blue in painting flesh.—With *White*, *Yellow Ochre*, *Raw* and *Burnt Siena*, *Naples Red*, and *Ultramarine*, there is scarcely an effect that can not be made out. To these may be added, if found necessary, in heightening and finishing, Naples Yellow (or, instead of it, a tint formed of White and Cadmium, commonly sold as an original pigment, under the name of *Brilliant* or *Bright Yellow*), *Terra-verde*, *Malachite Green*, and some few others, such as *Asphaltum*, *Madder-lake*, *Ivory Black*, etc., which last-mentioned are generally employed as glazers.

It is more difficult to anticipate the requirements of a palette for landscape than for painting a head or figure. Much must be left to the judgment of the artist. All that is advised, therefore, must be taken in a general sense, and applied with discretion.

43. In preparing the palette, having decided upon the nature and force of the highest and brightest sky-tint, give that precedence, in the place of White, at the head of the palette. Next proceed to prepare a lower range of sky-tints from it, by such additions thereto of Ultramarine, Yellow, and Red, in more or less neutral or decided hues, as the subject may require. (Blue-

Black with White, etc., may be found a very useful color in the darker tints of clouds.) From the sky-tints, proceed to those of the distance, gradually increasing the local colors until you reach those of the foreground. Thus the sky-tints pass by gentle gradations through the whole range of the palette until they are lost in the more decided colors required in foreground objects.

The order which we have advised, in relation to preparing the palette, may be equally recommended to be observed in laying in the masses of the picture. Thus, by the time we have the picture well laid in, we are able to judge, with some degree of certainty, of the amount of force of local tint which may be appropriately introduced; and, by bringing up parts of the foreground, or wherever it may be desirable to concentrate such force, for the sake of effect, we have a reliable scale to which our palette corresponds. Much may doubtless remain to be done beyond the mere laying in of the picture; and, after all, the learner may do better by studying out the way of doing it himself. What has been said must be considered more by way of suggestion, than given as a rule. Study and observation of the successful works of others, as well as of Nature, and practical trial, will be found in this, as in all other departments of art, the surest reliance.

44. A tint formed of Yellow Ochre and Ultramarine may make a very dull and unsatisfactory Green upon the palette, especially if placed by the side of one in which Chrome or Cadmium has been substituted for Ochre; but, in a landscape through which there is a diffusion of light, shadow, and reflection, as well as atmospheric influences, which, in a greater or less degree, break the intensity of local colors, it will be found to tell far more harmoniously than the more violent tint. It will certainly be found to be more manageable, and it leaves the artist with the advantage of a reserve.

45. For foliage in shadows, combinations of Ultramarine with both Raw and Burnt Siena in near objects, and by adding portions of the sky-tints to those that are more distant, will be found serviceable.

Terra-verde may be also employed to advantage in various combinations.

Malachite Green is of an exquisitely tender hue. It is much to be regretted that this valuable pigment should be almost out of use, by reason of its rarity and consequent dearness. A little of it mixed with the yellows, for high lights, breaks the brassy and disagreeable effect which they often produce; and, with all the other pigments employed in Landscape, it may be united often with the happiest effect.

In trees and foliage, as a general rule, it is better to get in the masses first, leaving the darker and lighter touches, by which they are to be further developed and elaborated, to be broken over

them. If the masses are laid in with proper care, and regard to the after-process for which they are to form a basis, it may surprise the learner to find with how little labor a high degree of finish may be produced by a few sharp, decided, and properly-applied touches. Instead of attempting to stipple up the whole with a small pencil, a full brush should be employed. In the course of a sitting, the color will become slightly tacky (31)—the more so if a strong drier has been employed as a medium, and the finishing touches can be thus applied, while the under-tint is still soft, with the utmost clearness. If further elaboration, or an increase or diminishing of the force of the masses, be found necessary, an after-process may be resorted to, by going over the whole with a glaze, or scumble, which may be again enlivened, while still soft, in like manner. It may be well to observe, as a general rule, that it is always better, in the "getting in" of a picture, to secure all the detail we can as we advance. In finishing, as at its commencement, we should be free to give our whole attention to its general effect. In the intermediate stages of its progress, all details and minutiæ should, as far as possible, be attended to.

The opinion which we have advanced with regard to the efficiency of a very simple palette for Landscape may be, by some, called in question. The result of our own limited experience in that department, and observation of the works of the best landscape-painters, not only of our own time, but of the past, have induced the conclusion.

A picture, and particularly a landscape, once carefully and substantially laid in with sufficient effect of airiness and light to sustain such an after-process without breaking up its detail of form, or injuriously affecting its general characteristics, the artist may have recourse to glazing, scumbling, and the various bolder expedients at his disposal, with the utmost confidence. It should therefore be an object of his highest ambition to hold this command over his work, and learn to make due allowance therefor in all its preparatory stages.

Less exacting in the requirement of severe preparatory study than most other branches of painting—less arbitrary in the requisition of extreme accuracy—affording more license in its practice, because more varied and less conventional in its aspects and combinations—and, besides, being more generally appreciated in results of trial, however they may reach but a very moderate degree of excellence,—landscape-painting offers to those, who can not or who may not desire to make art the business of their lives, many inducements. The difficulties of its practice in oil-colors are much less than they are commonly imagined to be. Oil-colors, beyond all question, with a little practical experience in their use, are far more manageable, and better adapted to faithful representation of Nature, than any others. They are more capable of approaching at once the truth of local tints, as well as the various effects of light and shadow, air and reflection, by which such tints may be affected in Nature. Hence the student of landscape-painting may be safely

advised to their trial, not only in his first attempts at home, but in his out-door studies from Nature.

46. We are not prepared to express an opinion how commonly the habit of painting in oil directly from nature prevailed among landscape-painters up to nearly our own period. If such, however, had been a common practice with them, it would be scarcely probable that a greater number of such sketches and studies would not have been still in existence. There are in every sketch, drawing, or study, thus produced, evidences of the presence of Nature which can scarcely be mistaken; and their sketches, especially in color, as well as their finished works, certainly induce a different conclusion. The almost universal practice of out-door study of Nature, by painting in the open air, which now so generally prevails among European artists, renders it scarcely necessary to enter upon a discussion of its advantages to the student. That it is absolutely essential to the attainment of excellence in landscape-painting, we would by no means wish to be understood as insisting. We know, indeed, that some of the best landscape-painters of our time have rarely, if ever, practised this method of study. This is well known to have been the case with the late American artist Cole; and many others could be mentioned, who, by strength of memory, or other natural or acquired qualifications, have successfully secured by other means the advantages of such study.

47. The inconveniences of painting in oil in the open air are much less than they are generally imagined to be, and very little trial will soon render its practice as easy as it is delightful and profitable. Sketch-boxes, made of wood or of tin, fitted with all essential conveniences, are sold at the shops, or may be contrived by the artist himself; and, with the addition of a camp-stool and umbrella, all of which may be carried in the hand or by a strap over the shoulder, the artist may take with him every requisite for out-door study and painting in oil-colors, in most compact and portable shape.

48. The exercise of much judgment will be often called in requisition in painting in the open air, from the variations of light on objects, and other causes. In the studio, the light on an object may be retained with little variation throughout the day; while in the open air, and particularly in sunlight, it is con

stantly changing, so that in the course of a few hours the general effect may be entirely altered. This may prove very embarrassing to a beginner, but by practice he will soon learn to make proper allowance for such variations, and be able to secure the particular effect he desires to represent by careful observation at the precise moment of its presence, and by judicious management in both previous and after operations. As such and many other difficulties that may be encountered can only be met and obviated by expedients which practice alone can profitably teach, it may be recommended that more than one sketch or study should be carried on at the same time, or rather in the same excursion. Thus, in the morning we may progress with one study, and in the afternoon with another. To this end, sketch-boxes are so contrived as to carry several sketches at once, in an undried state, without injury.

49. It is very important that the learner should be early accustomed to work by various lights, and to the imitation of every possible variety of effect by which Nature may be influenced. Whatever inconveniences in the management of his materials may often occur in so doing, they are insignificant compared with the advantages to be derived from perseverance in the more important objects of study and trial. This practice is equally advisable in the studio. Studies of objects, no matter what they are, should be made in various positions, and under every possible variety of light and shadow, relief and effect. The learner should not be too considerate of his own convenience, but regard it as secondary to the higher purposes for which he looks to Nature for knowledge and assistance.

We know not, among all the delightful ways to which the impulses of art direct, one affording so much real enjoyment as to be privileged to make the out-door world of Nature our studio—to be released from the noise and strife of life, and to breathe the free air of Nature, in converse with her. The memory of the moments thus passed—in the seclusion of the forest, by the brook, on the mountain-height, and the seaside—by the cottage, or rude log-hut, of our own land—or among the picturesque scenery of the Old World—will abide with us for ever, as consolations worth the labor of a lifetime to possess. These to the artist are no dreams, but realities, upon which he can place his hand and call them his own.

In the Old World, out-of-door study is carried to a much greater extent than with us. The traveller is for ever reminded that the artist is abroad; and scarcely a picturesque spot he visits, but he will there find either the well-equipped amateur, beneath his camp-umbrella, fortified at all points, and against all emergencies, with patent contrivances and conveniences, or the more business-like artist, with his well-worn sketch-box or portfolio. He may be, not unfrequently, startled by meeting, on his way, some strangely-caparisoned and even uncouth-looking figure, on foot or

mounted on that much-abused yet patient bearer of all burdens, outward or homeward bound on some expedition in search of the beautiful, and possibly he may be no less surprised to recognise therein one world-famed in art. There the artist claims, and the world accedes to him, in right of his vocation, privileges which exempt him from all restraint in his pursuits. His portfolio and his sketch-book pass and secure him favorable acceptation everywhere; and no degree of success or distinction elevates him to a position to cause humiliation, implied or felt, by being found still and for ever in a student's course.

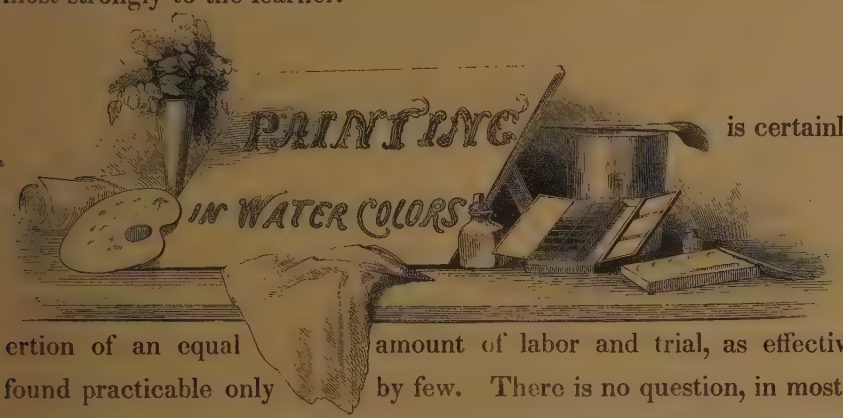
49. Painting is applied, as a general term, to any process by which the natural colors of objects are added to their linear representation. Thus, even works in *Pastel*, or colored crayons, and those in *Mosaic*—which are produced by an arrangement of bits of colored glass or stones imbedded in cement, and polished to an even surface—are often called *Paintings*.

We have given precedence to the subject of painting in oil-colors, in consideration not only of its intrinsic value as the most effective method for pictorial production, but as the surest, most direct, and at the same time easiest means by which the imitation of Nature may be successfully reached, and also as the best and most efficient training to the practice of all other methods.

50. It is too commonly imagined that a box of water-colors, or a few colored crayons, are quite sufficient for a mere beginner; whereas, such should be allowed every possible advantage

and assistance that can be derived from ease as well as efficiency of method or materials. One of the great objects of education in art should be to advance the learner as soon as possible beyond its first difficulties; to endeavor to make easy as well as plain the course and direct the approach to the comprehension of and power of expressing the truths of Nature; to develop to his understanding and appreciation its higher attributes, resources, and privileges; and to disembarrass him of all avoidable obstacles in the attainment of these important requirements. Other difficulties, which lie in the way of an approach to excellence, are quite sufficient in themselves to try the courage and exercise the patient perseverance of the learner, without his being unnecessarily involved in additional perplexities of methods and materials difficult of management, indirect in application, and inefficient in result.

It is very certain that an effect of color, as well as individual tints, can be expressed more directly and certainly by oil-colors than by any other method, and hence are the advantages it offers as a means of study. Undue importance is too frequently attached to the acquirement of mechanical dexterity in the management of materials over those which involve the strength of all art, and by which we are brought within the privileges of the great school of Nature, and made capable of comprehending and appropriating her wholesome lessons. That method or means which most directly leads to such desirable attainments is certainly that which commends itself most strongly to the learner.



is certainly capable of being carried to very great perfection; but, to attain thereby an approach to an equal degree of excellence, by the exertion of an equal amount of labor and trial, as effectively as by oil-colors, will be found practicable only by few. There is no question, in most if not in all individual cases, presupposing in each an equal amount of preparatory training and capacity in design, that those who make a beginning in painting with oil-colors will much earlier succeed in producing a comparatively successful picture than those who employ any other method; and, moreover, that such are better prepared, after mastering the first difficulties of painting in oil, to acquire a ready command of other methods. It is not from theoretical conclusions, but from observation and practical experiment, that we express without hesitation the opinion that the best training for any method or style of painting is first to paint in oil-colors.

Many instances have come within our observation of those who have been for years vainly attempting to realize their study and impressions of Nature with pastel, water-colors, and other methods, often with the aid of the best masters that could be procured, and by the exertion of the utmost and most patient perseverance, who have in a few trials with oil-colors at once felt and successfully availed themselves of its superior advantages. Such we have known return to their first methods with invigorated capacity, acquired by the practice of painting in oil, surprising even to themselves. We have further witnessed a degree of success in almost the very first attempts of painting in oils directly from Nature, which would scarcely have been attainable in years of long and arduous trial by other methods.

On the other hand, the artist in oil-painting may derive great assistance therein by making himself, to some extent at least, practically familiar with other processes, not only in consideration of occasional requirement of their service, but also by the advantages which he may hence derive by capacity of appropriation of their peculiar excellences to his own.

52. As ready conveniences for sketching and securing memoranda of effects in Nature, both water-colors and tinted crayons are of much value, especially to the landscape-painter. A small box of colors or a few crayons may be carried always in the pocket, together with a sketch-book of stout paper, or cards of Bristol-board; and however such means may not be as efficient as oil-colors to approach the truth of a reality in Nature, they are still capable of producing memoranda from which the memory may derive invaluable assistance. For such purpose, very few colors will be found sufficient. From the three primitive colors, blue, red, and yellow, combinations may be produced of endless variety; indeed, could we possess pigments equal to the wonderful purity of tint with which they are developed by the prism, we should scarcely require other for water-colors, and only for oil the addition of white, which should be theoretically regarded as the rejection, as black is the absorption, of all colors. However this may appear to the learner inconsistent with the universal requirement by artists of so many more colors, it is a truth that he should bear in mind, and from the investigation of which he may derive much profit—if in no other respect than in teaching him that the strength of the palette consists less in the number and variety of the pigments than in their skilful combination and application.

53. The pigments for painting in water-colors are generally prepared and sold either in hard cakes, or in a moist state, put up in small cups or metallic tubes. The cups are made to fit the portable box of japanned tin; and the colors are used directly from them, without further rubbing down. For those in cakes or tubes, a palette, plate, or slab of porcelain, is requisite.

The moist colors, since their recent introduction, have almost entirely superseded the dry cakes, over which they possess many advantages, but are in some respects more difficult to manage in producing even and flat tints, and broad washes.

The judicious arrangement in the box of a set of moist colors is a matter of some importance. As the box is made to serve as a palette, and the brush is charged with the colors directly from the cups, accidental mingling of one with another in its immediate vicinity will be almost unavoidable. They should therefore be arranged, to obviate this inconvenience, in a manner to avoid strong contrasts, and with all possible harmonious agreement one with another. The order in which they are given in the following list, for a box of eighteen colors, may be recommended:—

54. (1) *Gamboge* is very generally employed: *Indian Yellow* is a more intense color, but requires great caution in its use; its permanency in water is less suspected than in oil. (2) *Yellow Ochre* is as valuable in water as in oil painting; as are also (3) *Raw Siena* and (4) *Mars Yellow*. (5) *Light-red* or *Burnt Ochre* will be often found of service; managed with caution, it is a pigment of great utility. (6) *Vermilion* is too opaque and heavy to work well with water, yet it may be frequently employed to advantage. (7) *Rose Madder* and (8) *Lake* are of great value, as will also be found (9) *Burnt Siena*, (10) *Purple Lake*, (11) *Brown* or *Burnt Madder Lake*, (12) *Vandyke Brown*, and (13) *Sepia*. (14) With *Ivory Black* the purest grays may be formed, and its extent of service reaches to the utmost requisition of depth and intensity of color, which may be varied and modified by combinations with the other pigments. (15) *Indigo* is of much value, particularly in combination with other pigments. (16) *Olive Green* or *Terra-verde* are both serviceable colors. (17) *French Blue* or *Ultramarine* has generally taken the place of the more expensive original preparation from Lapis-Lazuli. It will be found useful for many purposes, but for skies, distances, and clear washes, (18) *Cobalt Blue* is considered preferable.

There are many other pigments employed in painting in water-colors which may be substituted for some of those we have named. The above list is given on the authority of one of the most distinguished painters in water-colors now living, as fully adequate to every requirement.

Naples Yellow, *Cadmium*, and *Lemon Yellow*, are often used; also many combinations of pigments, such as *Payne's Gray*, *Neutral Tint*, *Hooker's Green*, *Prout's Brown*, etc., etc. *India Ink*, although admirable for drawings in chiaro-'scuro—or black-and-white—will be seldom found requisite in painting, except in faintly indicating the general drawing of a picture, when it should be only used in the shadows. For this purpose, however, a more neutral tint is better.

White is not found in the above list of colors for the box, as it is generally used as prepared in a liquid state, under the name of *Constant* or *Chinese White*, which is an oxyde of zinc, without

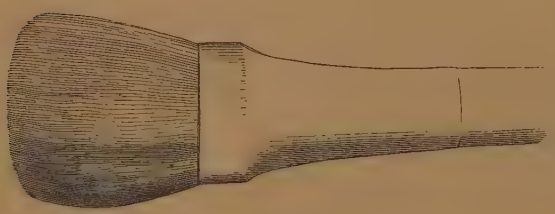
the body or opacity of white lead, and less likely to be injuriously affected by impure atmosphere, and other causes, by which the latter when used in water becomes darkened, often to the ruin of a picture or drawing.

By the process of water-color painting, as generally practised, the ground or paper is the source of light or white, and its perfection in a great degree depends upon a preservation of the purity of this basis, which, once lost, may be often difficult to recover; white as a pigment being rarely used, except to break the intensity of certain other pigments, much in the same manner as scumbling is applied in oil-painting (33). The quality of the paper, therefore, is of no little importance.

55. By many artists, paper of rough surface is preferred; by others, that which is smooth: all, however, agree that it should be of an even texture, well sized, and of a firm fabric. It should be stretched upon a board or frame. It may not be always easy to decide upon the right side of a sheet of paper, without careful examination. Should the maker's name be in it, by holding the sheet to the light it will appear. If it reads in the proper direction, the side next the eye is that for the drawing or painting. The English drawing-papers are universally considered to be superior to all others.

56. Fine brown or sable brushes, not too small, are the best for general purposes. They should

be selected of a full, even shape, gradually tapering to a point. Brushes should never be left in water, nor suffered to become dry with color in them. A habit of pointing them with the lips should be guarded against. This can be done much better on a spare piece of paper, or a cloth. Large camel's-hair brushes, either flat or round, are required for broad washes.



To acquire facility in the handling and management of the pencils and brushes, practise with one tint, such as Sepia and Indian ink, may be strongly recommended.

57. As far as general principles, both of purpose and method, are involved, the process of water-colors, as of all others, differs only from that of oil in the requirement of a mode of treatment adapted to their peculiar qualities and effect of application.

In water-colors, the white-paper ground supplies the place of a positive white pigment in oil. In the one case, the color is of a more or less solid character; while in the other it is as a stain, more or less intense, through which the effect of the light of the paper, or ground, is still evident —assimilating in this respect very closely to the process of glazing in oil-painting (29). To preserve, therefore, this "internal light" in its purity, and thus to retain the greatest advantage that painting in water-colors possesses over oil, is important. To what extent this advantage may be made available in oil-painting, the learner, as he is advanced in capacity, will comprehend.

58. However the practice of painting in water-colors may admit of as unrestrained license in the hands of a master as any other method, the learner should not be impatient of the wholesome restraint of sure if less rapid ways to success, by which such masterly command may be most certainly attainable. The basis of painting by all methods is a careful predetermined outline, or general indication of the subject, however faintly yet sufficiently expressed to secure the just proportions and accurate position of all important objects, masses of light and shadow, etc., beyond the hazard of necessity for after-corrections. It is true that, in the process of all works of art, new suggestions may be presented, sometimes even by accidents of execution; yet such should not be relied upon too confidently, nor are they to be made profitably available without a judgment well matured, and a degree of practical skill only to be acquired by study and experience.

59. In drawing the outline of a water-color design, even a greater degree of neatness and delicacy is requisite than in oil. In the latter method, the solidity of the pigments may obscure all lines after they have served their purpose, and obliterate all errors or evidences of correction, which in the former would not only cause much difficulty and trouble, but might utterly destroy the beauty of the work. Indian-rubber is apt, not only to tear up the surface of the paper in spots where it has been used, in a manner to cause irremediable blotches in washes passed over them, but also to prevent the just absorption of color. As far as possible, recourse to it should therefore be avoided, by making out the outline on a separate sheet of paper, and transferring or calquing it in its place very faintly by means of transparent paper, etc. (vii.–ix.) This may be more conveniently done in works of the studio than in sketches and out-door studies. If a pencil is at all employed, it should not be too hard to produce a mark difficult of obliteration, nor so soft as to make one unnecessarily heavy. The more faint and yet sufficiently distinct the outline, the better.

60. In getting in the masses, care should be taken to advance their intensity gradually, and, as far as practicable, equally throughout the picture; thus preserving its harmony complete, from

the careful outline to the finished work. Many artists adopt the method of advancing their picture through its first stages entirely by means of clear washes of a neutral tint, composed of Indian ink, lake, and Prussian or Antwerp blue. So commonly does this practice prevail, that an admirable *Neutral tint* may be found ready prepared in cakes or in a moist state (54). Over this preparation, if carefully and delicately applied, they proceed with the gradual addition of color, and often with the most effective results.

61. For broad washes, a large and full brush should always be employed, and the tint or wash should be prepared in a cup or saucer, in sufficient quantity to insure certainty in required repetitions. The drawing-board should be placed in a sloping position, and the tint should be applied by beginning at the top and gradually extending the flow downward; by which means the most even and flat masses, or the most delicate gradations, may be produced. From the masses, proceed to the gradual introduction of detail, and thus advance to the more decided and vigorous touches, always bearing in mind how much more easy it is to increase the intensity or power of a tint in water-colors than to reduce it. Not that this may not be often done effectively by various means—such as moistening the paper with water, and absorption by a cloth or unsized paper, or even Indian-rubber or stale bread may be resorted to—yet such expedients in inexperienced hands are not unfrequently causes of mischief, which should be guarded against. As we have so frequently had occasion to observe, the fullest directions in relation to any process of art are of little use to the learner without practical trial and experience. On these he must place his reliance, and from these he must learn the availability of the endless expedients and resources of all methods.

62. By many of the most successful artists abroad, especially in landscape, water-colors are employed, not only as ready expedients for sketching, but also in the production of most highly-finished works, in which are often combined the extreme clearness and delicacy of water-tints with the force, solidity, and depth of color and tone, of oil-pictures. Many do not confine themselves to the process of mere *washing*—as the application of water-colors is most generally understood with us to imply—but treat the pigments very much in the same manner as those ground in oil by substituting *size* therefor, which should be more properly considered painting in *Tempera*, or *Distemper*.

63. Painting in Tempera is employed in large works for theatrical scenery, internal and (in climates not affected by the injurious consequences of exposure to frost) also to external mural decorations, as well as in smaller pictures on panels, paper, and canvass.

Formerly this art was in much more general use and practice than at present, especially in Italy, where many fine specimens of it are still to be seen, rivalling in durability both fresco and oil painting. Many of the pictures by the early masters were painted in tempera, and afterward covered with a resinous or oleaginous varnish, by the effect of which it frequently requires close observation to discover the difference between them and pictures in oil. The grounds or preparations for oil-pictures, long after the introduction and more general employment of that process, were commonly in tempera; and often the dead-coloring of the picture was done by this process. The Venetian and Flemish masters long retained this custom, and much of the brilliancy of their local tints and coloring may be attributed thereto. It is an error, however, to suppose that these tempera grounds or preparations were of an absorbent character—as the existence of a strong size or resisting varnish can be clearly detected between the tempera-ground and the after-process of the picture in oil.*

64. The size most usually employed in tempera is either that made from parchment or glove-leather, or isinglass, the quantity to be combined with the colors varying according to the nature of the pigments—sufficient being requisite to prevent the color when dry from being rubbed off by the application of the fingers, and not in an excess by which a shining or glaring effect on them should be produced. Practice can only teach how to obviate the difficulty arising from the fact that the tints appear differently when dry from what they do when first applied. By some the pigments are ground in water, and kept ready for use in a dry state, while others preserve them in water, in cups, adding the size when employed. For small works, a palette in which small cups are set, or one of japanned tin, with a suitable number of hollows to hold the pigments, may be employed. The brushes used are similar to those for oil and water-color painting.

Tempera-painting, when applied to walls, very often passes with the uninformed for fresco.

65. Painting in Fresco is the application of colors ground in water to a freshly-plastered wall, with which they become incorporated to a sufficient depth to be as permanent as the plaster itself.

The peculiarity as well as chief difficulty, or rather inconvenience, of the process of fresco, consists in the necessity of completing the picture by portions while the plaster is still in a fresh and moist state; so that as much only of the plaster can be applied in the morning as the artist may be able to complete thereon a certain portion of the picture in the course of the day. This

* For much valuable information on this, as indeed on many other subjects deeply interesting to the art-student, he may refer with advantage to Sir Charles L. Eastlake's "Materials for a History of Painting," "Merimee on Painting in Oil," etc., Mrs. Merrifield's translations, treatises, etc., etc.

is the last or finishing coat of plaster, and requires to be very thinly and evenly laid upon others of substantial mortar, which should be previously applied and finished in the usual manner of a carefully-prepared wall.

66. The durability of fresco-paintings is so dependent upon the preparation of the wall, that the utmost care in this particular is necessary. The quality of the lime, sand, and all the materials employed, should be unquestionable; and none but the most skilful and reliable workmen should be trusted in the work. The final coat of plaster should be laid under the artist's eye, if not by his own hand.

The progress of a work in fresco being thus by portions, each of which must be completed at once, renders it necessary that a cartoon or drawing of the whole should be previously prepared, as well as that the arrangement of color and general effect should be decided beforehand. These cartoons require to be made on strong paper. Over the last rough plastering a general indication of the whole subject should be traced. This may be done in various ways. The most common method, in small works, is, to prick the outlines through with a needle to a separate sheet of paper, and, by means of a small bag of thin muslin with powdered charcoal, to pounce the outline through to the wall; or to trace it thereon with a blunt point or style, which is the most common practice. This serves as a guide to the final coat of plastering, which is to receive the painting, so that the artist can proportion each day's work with exactness, and receive assistance in his operations.

The final coat of plastering laid over just sufficient space for a day's work, a more elaborate tracing is made thereon, and the artist proceeds, with all possible celerity, with his work, in which a greater difficulty occurs with regard to the appearance of the colors in a wet state than in tempera; for allowance has not only to be made for the variation between a pigment, or tint, in a moist or dry state, but for the peculiar action thereon, both by the lime and absorption of the wall. Fresco-tints may be fully developed on an old or dried wall in a few days, while on one recently plastered as many weeks may elapse before they assume their permanent appearance.

67. The colors are ground in water and kept ready for use in pots. No size is necessary, except perhaps a very little for such pigments as ultramarine, charcoal black, etc., and even then with very questionable propriety; the adhesive property of lime combined with water being the only reliable medium for color in fresco, and its durability dependent upon its perfect incorporation with the plaster.

Not only the original pigments, but also as many tints and combinations as may be required,

should be previously prepared in cups, so as to insure uniformity and harmony throughout the picture.

The best method of testing a tint is to touch it on a lump of dry umber, which instantly imbibes the water, and shows very nearly how it will appear when dry. Besides the cups, a palette of japanned or painted tin may be requisite, with a cup in the middle for water.

The tints require to be laid on rapidly and at once. The first applied will strike in and be absorbed, and it is only by repetitions that a permanent tint may be obtained.

The brushes employed in fresco are similar to those used in oil; square or flat brushes, with long bristles or hair, are requisite for broad tints.

68. The Colors which can be used with safety in fresco are few, and only such as are not injuriously affected by the action of lime. For this reason, many of the most brilliant, which may be employed in other methods, must be excluded from fresco.

For *Yellows* the varieties of native Ochres afford very ample resources; Naples yellow, in interior works, may be used with safety.

Reds are supplied from the ochres calcined, and the oxydes of iron. Burnt Terra di Siena is an invaluable color for fresco.

Ultramarine, either the genuine preparation from Lapis-Lazuli or the French and German imitations of it, is almost the only pure blue that can be employed.

For *Greens*, Terra-verde is a most reliable pigment; certain oxydes of copper may be employed, but great care is requisite in their management.

The *Blacks* are many: charcoal, both in its pure state and in combination, will be found very serviceable; also burnt lamp-black.

The only *White* that can be safely employed is a purified preparation of lime; and as this is so extensively required throughout the picture, the utmost precaution is necessary that it should be of good quality. Many artists prefer the lime of oyster-shells, selecting the best, having them carefully washed, and afterward burnt.*

69. Pictures may be painted in fresco on a substantial lathing, or upon iron or copper frames with a wire-worked foundation; the plaster being thereon laid, and the process conducted precisely as on a wall; and the picture, when completed, may be set in its place as permanently as if

* The white for fresco most esteemed by the Italian painters, and known as *Bianco Sangiovanni*, may be thus prepared: Air-slaked lime of fine quality is mixed with water in an earthen jar, and allowed to settle. The water is then poured off, a fresh supply added, the operation repeated for a week; and the lime is then ground, and dried in small cones. The longer it is exposed to the air, the better will be its quality, as the carbonic acid lost by the process of calcination is thus restored.

painted directly on the wall itself. This method offers not only the advantages that the picture can be completed in the studio, but also affords greater facility in its execution from the fact that the drying of the plaster can be retarded by wetting it from the back of the picture, hanging before it, during suspension of work, wet cloths, etc., and thus enabling the artist to devote two or three days to each portion. For those who desire to experiment in fresco-painting, it offers great advantages.

As those who may desire to attempt fresco-painting to an ambitious extent will be led to seek more ample directions on the subject than can possibly be afforded by an elementary work, we leave the subject with sufficient for at least a trial, and with the assurance that they will find fresco-painting, like all other methods, simple and easy to any one skilful in design, and practically as well as theoretically conversant with the leading principles of the art of painting by any other method.

70. For mural pictures, fresco certainly offers many decided advantages in its peculiar applicability to all positions, and may be successfully employed in situations in which an oil-painting would be comparatively lost, by reason of irregularity of surface, cross-lights, reflections, etc.

However inadequate it may be for successful rivalry with oil-painting in excellence of color, it at least affords most ample means of expression in the higher requisites of design.

While the value and capacity of painting in oil were gradually developing in the Venetian and other schools, the essential requisitions to perfection in the art, accuracy and purity of design, advanced with equally sure and steady pace in those of Rome and Florence, until we find the great masters of design and color as it were face to face with each other. When Michael Angelo, in acknowledging the merit of Titian's color, exclaimed, "What a pity it is that these Venetians do not draw better!"—he might have been justly replied to by the veteran of the palette—"And that these Florentines and Urbanites do not know better how to give color to their drawing!" And yet it may be fairly questionable if much of the eminence attained by either in their respective qualifications might not have been in a great measure the result of the comparative singleness of purpose with which they pursued the objects of their ambition.

The art of painting would appear thus to have reached a period of advancement from which its approach to the utmost possible perfection might be reasonably anticipated by a combination of learning in design with skill in color. The rival schools seem for a time to have set about the work of learning of one another. The great colorists sought to repair their deficiencies in drawing and the higher attainments in design, while those who had hitherto placed their reliance therein were brought to feel the importance of color as well.

In vain the colorists attempted to realize by fresco the results which they had achieved in oil. In some instances, and particularly in the picture by Raphael of "The Miracle of Bolsena," a higher degree of excellence in color was attained than had hitherto been approached in fresco; yet the requirement of a more efficient method of mural painting was still felt. Great importance was attached to the durable character of fresco, which it maintained from the impression that it was the only approved and generally-employed method of the ancients (72).

71. Sebastian del Piombo, fortified, as is alleged, with designs by Michael Angelo, and familiarity with the process of oil-painting, as practised by the Venetian masters, made a most successful experiment in mural painting in oil, which even at this day, although blackened by the smoke of candles, and from causes which more or less affect all paintings in oil, besides the further disadvantage of being executed on a concave surface, bears very favorable comparison with his fresco-works, which are in its immediate vicinity.

Raphael, than whom no one could be better qualified to judge of the distinctive advantages of the two methods, seems to have been not only favorably inclined toward the substitution of oil for fresco painting, but at the time of his death to have decided upon its adoption in the embellishment of the great Hall of Constantine in the Vatican—preparations for which were in progress at the time of his death. Two groups only were executed in oil, if not by his own hand, at least by his scholars under his personal direction, and it must ever remain a subject of the deepest regret that his death should have prevented the completion of the whole, according to his intentions.

Raphael was not of an experimental turn of mind, but cautious in conclusions and timid of failure; hence his conclusions were always judicious, and his failures rare. From the earliest traces of his career to the last moments of his life he appears to have been singularly free from the time-wasting abstractions which have too frequently diverted the impulses and energies of men of genius, and therefore the more importance may be attached to this innovation, on long-established opinions, in favor of oil over fresco painting.

That this lead was not followed successfully by succeeding artists might appear stranger if other causes than the inapplicability of oil to mural painting were not obvious in the art falling into a different course of requirement, which it scarcely comes within our province to discuss. The last works of importance in fresco were by the Caracci and their scholars; but even these, with all their excellences, bear unfavorable comparison with their works in oil, and induce the regret that they were not executed by the latter more effective and less perishable method. For, however the commonly-received opinion of the durability of fresco may prevail, it can not be denied that works in oil produced by masters of the past three centuries are at this day in far bette:

state of preservation than their frescoes. Those of our own period may claim the advantages of experience, and the aid of greater scientific knowledge in the management of materials, which time alone can verify.

Fresco is still practised successfully to some extent in Europe. Many artists adhere closely to the methods of the early masters. Others have adopted innovations and improvements, by which the process may be rendered more easy and effective, as well as reliable in resisting the action of time and exposure.

Recently, however, another process of mural painting has been introduced, or rather revived, which offers a combination of the advantages of both oil and fresco, worthy at least of consideration.

72. Painting in Wax, or Encaustic, has recently occupied a considerable amount of interest and practical experiment in Europe. Although the process is so called, as at present practised, it differs very essentially from the methods employed by the artists of antiquity, with whom it was a very important branch of art, and extensively applied to decorative and other purposes. There seems to be much difficulty in arriving at a decided opinion with regard to the process of encaustic among the ancients, and it is very probable that their methods of employing wax as a medium of color — or as a preservative varnish or saturation applied to fresco or tempera — were various, according to the nature of the material upon which the painting was executed, as well as to its subject and situation. Much investigation and study have been bestowed upon the subject (especially in France and Germany), as well as practical experiment by artists of skill and reputation.

In the method most generally adopted at present, the employment of heat, or the *cauterium*, is discarded. The colors are ground in a wax varnish, or medium, which is used throughout the picture, even to the preparation of walls, grounds and canvass, precisely in the same manner as in oil-painting.

Of the preservative qualities of wax there can be no question; that a medium for colors formed upon its basis may possess in many respects obvious advantages over oils, may be equally true; and we have the assurance of artists of distinction, who have become practically familiar with the process, by the execution of extensive works therein, that it involves no difficulties which can not be readily comprehended and overcome by any one experienced in oil-painting.*

It further offers the advantage over fresco, that works of any dimension may be executed in

* Painttng in Encaustic may be found very amply treated in the work of M. Paillet de Montabert (*"Traité Complet de la Painture,"* ten volumes 8vo, 1828, Paris), and by many other able writers upon the subject.

the studio, and afterward attached as firmly to walls as if they were painted thereon. All facilities and expedients that are available in oil-painting are equally so in this method; and there is certainly much less liability to alteration in the tints from natural causes, which more or less affect works in oil by the action of time, or from dampness and exposure.

73. Painting or Drawing in Pastel, or Colored Crayons, may not only be employed advantageously for sketches and studies, but also in the production of very pleasing and effective pictures. The process is very simple, and command of it may be very readily attained by any one possessing a just comprehension of the general principles of painting, and their practical application by other methods.

The paper for pastel should be stretched, in the manner advised for water-colors, and of a substantial character, not too highly sized. If slightly rubbed over with fine pumice-powder, the crayons will both work and adhere better; or a slight coat of thin starch, with pumice-powder, may be given with a broad, soft brush, as a preparation. Fine canvass thus prepared may also be used.

Crayon drawings have the disadvantage of liability to injury, unless defended by glass, or some process by which the pigments may be more firmly attached to the paper than it is possible to effect by the mere friction employed in their application. Whatever process may be resorted to, we know of none that does not, in some degree at least, materially affect the clearness and purity of the tints, although even this in some cases may be turned to advantage by judicious treatment; as a crayon-drawing, thus fixed, may be worked over with tempera or water-colors, or even with oil, by the further application of varnish.*

* The following may be considered among the most approved methods of fixing drawings, or paintings in crayon: To a saturated solution of alum, in pure water, add as much fish-glue as may form a size of proper consistency (which can only be regulated by the character of the drawing for which it is intended). Let the solution stand for about thirty-six hours, after which it should be boiled. Pass this glue-water, saturated with alum, through a linen cloth, and add about an equal quantity of some colorless spirit or diluted alcohol. For a small drawing, an ordinary dish may answer; but, if large, a wooden or other tray, water-tight, must be provided for the solution; and, holding the drawing horizontally, face downward, gently immerse it therein, cautiously guarding against its touching the bottom. Almost instantly lift it out, without changing its horizontal position, in which it must remain until dry, when the success of the process may be readily ascertained.

A drawing thus treated may be varnished by the further application of fish-glue, to which is added about one third of spirits of wine. When this is dry, the ordinary spirit-varnish may be passed over.

Another method is, to pounce over the drawing very evenly, by means of a gauze-sieve, finely-powdered gum-arabic, after which it is exposed to the steam of boiling water.

The various recipes for securing crayon-drawings by means of volatile oils are very inefficient.

As we have known so many drawings to be utterly ruined by experimental attempts at fixing them, we advise no one to make his first trial on one of value. Glass is their surest preservative.

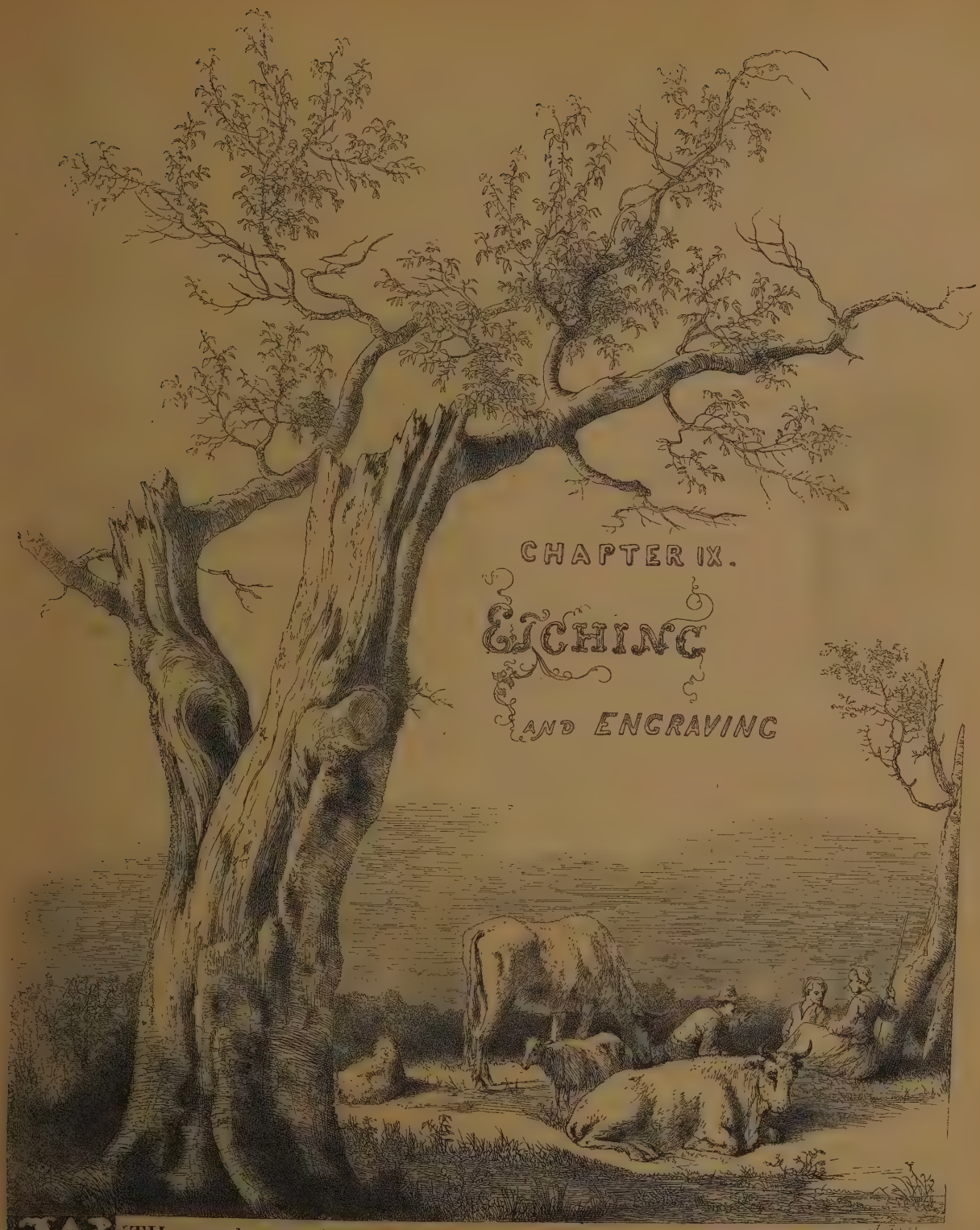
To mount a drawing on glass — procure a pane, or plate, of the proper size; clean it perfectly with a little whiting or chalk, and run a narrow border around it of strong glue. Very slightly dampen the back of the drawing, and lay it face downward on the glass; and be certain of a perfect adhesion of the paper on the edges, which it may be better to extend over them sufficiently to form a border. Place the drawing, thus mounted, on a cloth or several sheets of paper laid upon a flat board or table, and over it another dry cloth, with a drawing-board, or with one or more large books, not too heavy, and let it remain until perfectly dry.

The color of the paper, or ground, is a matter of choice, and can only be regulated by the nature of the subject. Paper of a gray tint is most generally preferred.

In laying in the masses, and in blending the tints, both the stump and finger may be used, as well as a bat of cotton, or a soft rag.

The Swiss crayons are universally considered to be the best. Crayons put up in paper are most convenient for sketching, as they are thus rendered less likely to be broken in the pocket or in handling. The colored pencils prepared by Wolfe and Sons, of London, and sold under the name of Creta Laevis, are admirably adapted for sketching, besides possessing the property of adhering very firmly.

Having sufficiently dilated upon the most generally-practised methods of painting to answer all reasonable requirements of beginners, we have only, in conclusion, to urge upon them the importance of perseverance in their attempts, and that they should ever bear in mind that the leading principles of the art and their application are common to all methods and subjects. Let them not be disheartened by failure, nor assume unwarrantable confidence from partial success, unless it be attended by comprehension of the means by which it has been achieved. Doubtless there may be many who have felt disappointed to find so little done for them, and so much dependent upon their own exertions, and who may still imagine that they only require more minute directions to reach the attainment of excellence. To such we would quote the reply of Rembrandt to one of his scholars: "Try to put in practice what you already know; in so doing, you will in good time discover the hidden things which you now inquire about."



CHAPTER IX.

ETCHING AND ENGRAVING

WITH regard not only to its consideration as a valuable and effective application of drawing to practical purposes, but also to its service in maturing the hand to decision

and accuracy of execution, and in various other ways assisting to a knowledge and command of the principles of design, the art and practice of *Etching* deserves much higher estimation, and earlier trial by learners, than it is generally imagined to merit. The process is most simple. Any one who can draw can etch; and in many respects it may be even easier to produce a finished and effective result by the etching-point than by either the pen or pencil.

2. An etching is but a drawing made with steel points or needles, set in convenient handles (which are held and managed as a pen or pencil), upon a plate of metal over which there has been previously laid a black varnish, or ground. The metal, laid bare by these points in lines

marked with great distinctness, from the strong contrast of the bright metal against the dark ground, affords the artist the utmost advantage, in both the progress of his work and in forming a correct judgment of its effect—notwithstanding that the lines appear light and the ground dark. This, in some respects like drawing upon a slate, may be found at first embarrassing, but with a little practice as perfect a command of lines, thus expressed, is acquired as if they were shown in black. The drawing completed, over the whole is poured a corroding acid, which takes effect upon the metal exposed by the lines of the drawing, and is resisted by the ground in such parts as remain untouched. The process of corrosion being properly conducted, the ground is then removed, and the lines of the drawing are found to be eaten, or, as it is technically termed, "*bitten in*," the metal, to a depth capable of holding printers' ink. The plate is then covered with such ink, which is wiped off in a manner to leave all the lines full, while such parts as were protected from the action of the acid by the ground, or varnish, remain clean. By means of a rolling-press the plate, thus charged with the design, delivers it with the utmost fidelity to paper, and with a capacity of repetition to thousands of perfectly similar impressions, according to the character of the work, and the nature of the metal employed.

3. That an art so simple in its process should not be more generally practised than it is, by both artists and amateurs, can only be accounted for by the unnecessary amount of difficulties which is commonly imagined to be involved in its successful management, while there is nothing, in truth, therein, to place proficiency beyond the reach of easy attainment by any one skilful in drawing, and especially with the pen. To artists the etching-needle supplies a means of meeting, in a most efficient manner, the extensive requirement which exists for design in literary illustra-

tions, of which they should avail themselves. An engraving at best is but a translation, often poorly compensating, by an exhibition of mechanical dexterity, for the spirit of an original work. Nor are the inducements to trial less with the amateur than with the artist, from the various resources of gratification as well as indulgence of commendable ambition which it may supply, even to those who seek the ways of art for the enjoyment alone which they afford.

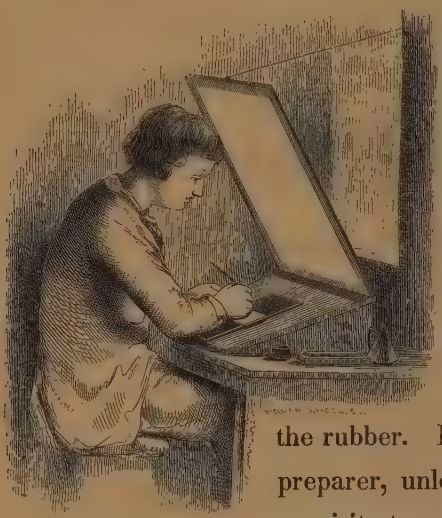
4. There is something irresistibly tempting to trial in the look of efficiency and feeling of aptness to the hand of an ETCHING POINT or NEEDLE—far more so than either pen, crayon, or pencil, or any other instrument for drawing that we know of—always preserving a firm and equal point—producing a certain and even line—no cutting away or breaking—no blotting or spattering—but true and reliable as the good steel of which it is made. Then the metal of the plate holds with such gently-yielding firmness to the pressure, affording an agreeable rest to the hand, and at the same time admitting the utmost freedom in its movements. That all who can draw do not avail themselves of the privileges they possess for its agreeable and efficient employment, can only be attributed to the fact that they can not be aware of the ease of its successful management, and of the advantages to be gained by its use.

5. The practice of etching formerly prevailed among artists to a much greater extent than at present, although there are many of our own time who have very successfully thus extended and perpetuated their reputations. How much has been lost for want of trial by many others, and how much may be yet accomplished by such trial, can not be doubted. Therefore should the attention of the art-student be called early and earnestly to the subject. For conducting the merely mechanical portion of the process, a very few directions will be sufficient; the skill requisite to its successful application rests with the artist.

6. The metal plates, upon which etchings are most commonly made, are either of copper or steel. The latter offers advantages in capacity of yielding a greater number of impressions; but for ease of management, especially to a beginner, the former is much more generally employed.

7. Plates are to be procured ready prepared. They should always, however, be carefully examined previous to beginning an etching upon them. In doing this we have occasion at once

for a suitable table or desk, and a blind of tissue-paper arranged with reference to the light, etc., in a manner which may be better understood by illustration than verbal direction, and which will further show the most convenient and generally-adopted disposition of appliances for etching. By placing the plate on the desk, and rubbing it over with an ***Oil-Rubber*** (which is nothing more than a long strip of cloth, or flannel, about two inches wide, rolled up as tightly as possible, and made solid by being well wrapped with twine, and then trimmed evenly on the ends with a sharp knife), all scratches and blemishes, which would injuriously affect the work, will at once become evident. A very little oil, either olive or lamp oil, should be applied with the rubber. If scratches are numerous, the plate should be returned to the preparer, unless the artist is willing to expend the strength and patience requisite to give it a proper polish, by means of pumice, oil-stone, charcoal, burnishers, and finally the oil-rubber, to which he will be obliged to have recourse. At all events, we would scarcely recommend a beginner to try the experiment.



8. If the plate is in good condition, of which it requires very little experience to be capable of judging, nothing further is necessary than to clean it carefully with whiting and a dry rag, cautiously observing that it is perfectly free from oil, or any greasy substance.

9. Etching-Grounds, in balls and of different qualities, may be procured of engravers, or at the shops where engravers' tools are sold, the harder kind being best adapted for use in summer and the softer in winter. Before using, these balls should be tied up tightly in stout yet fine silk.*

* The following are approved recipes for Etching-Grounds: —

I.

"To two ounces of *Asphaltum* add one of *Burgundy Pitch* and one ounce and a half of *White Virgin Wax*. The asphaltum should be finely powdered, and then melted in a glazed earthen vessel over a moderate fire, before the Burgundy pitch is put in. The wax must be added last, when the whole composition must be well stirred, and then poured into warm water, to be further incorporated by means of the hands, and made up into balls."

II.

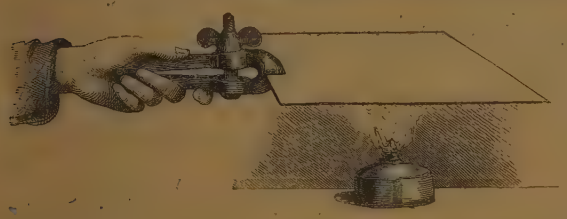
"Take of *Virgin Wax* and *Asphaltum* each two ounces; of *Black Pitch* and *Burgundy Pitch* each half an ounce. Melt the wax and pitch in a new earthenware glazed pipkin, and add to them by degrees the asphaltum, finely powdered. Keep the whole upon a gentle fire until it is in a state that, by dropping a little upon a plate, it will break, when it is cold, by bending it two or three times between the fingers. The varnish may be then taken off the fire, and allowing it to cool a little, should be poured into warm water, that it may be worked more easily with the hands into balls.

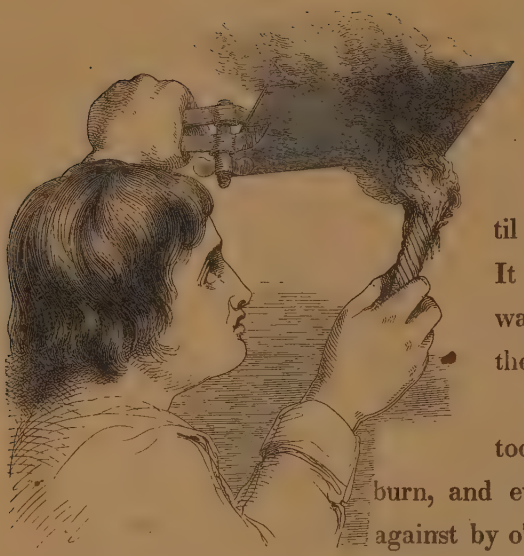
"N. B. — The mixture must be simmered only, not allowed to boil, and should be stirred continually. The water into which it is poured should be about its own temperature. More asphaltum will make the ground harder for use in summer, and less soft for winter."

10.

A DABBER is next to be provided, which may be readily made by stretching a piece of silk, of as even and fine texture as can be procured, over a disk of about two or two and a half inches diameter, made of stout card or pasteboard, between which and the silk there is a bat of fine wool, or a mixture of wool and raw cotton—the silk being gathered and tightly bound on the upper side to serve as a handle. Great care should be taken to keep both the dabber and etching-balls free from dust and grease of any kind.

11. TO LAY AN ETCHING-GROUND—the plate should be held by a hand-vice over the flame of a spirit-lamp, or of more than one lamp if the plate be large, observing to move it constantly over the flame, so as to effect an equal amount of heat to every part of it. Or, the heating may be effected by holding under the plate a roll of ignited paper. The objection to this latter method is, that burnt particles and ashes from the blazing paper are apt to be scattered about, and cause annoyance. Another method of heating a plate, and one well adapted for those that are large, is by means of the flame from a rag, placed in a tin or other safe dish, and saturated with spirits of wine. When the plate is sufficiently hot to produce pain to the touch, or a hissing from the contact of the moist finger, it is warm enough. Proceed to rub the ball of etching-ground gently over it in every direction. The heat from the plate causing the ground to ooze through the silk, it may be very evenly distributed thereon, which should not be more than sufficient in quantity perfectly to cover the plate. The distribution of the ground on the plate is to be completed by dabbing it with light touches, and by regular courses all over with the *dabber* while still warm; carefully observing that the plate does not get too cool in the process, which may be easily detected by the dabber leaving dead or matted impressions on the ground, in which case the plate must be again slightly heated until the ground presents a clear and flowing appearance. The utmost care should be taken to guard against the falling of dust or motes upon the ground while it is warm.





12. The plate is then, while still warm, to be held horizontally, face downward, and to be smoked with an ignited twist of wax-taper gently moved under it in every direction (at a sufficient distance from the flame to avoid risk of burning), until it become thoroughly and evenly blackened. It should be then placed carefully, face to the wall, to cool; after which the ground is ready for the best effort of the artist's hand.

Great caution is necessary lest the plate get too hot in the process, as in such case the ground may burn, and even break in minute cracks. This may be guarded against by observing that the heat is at no time so great as to cause the ground to smoke. If the slightest indication of smoke appears, it should be instantly removed from over the lamp.

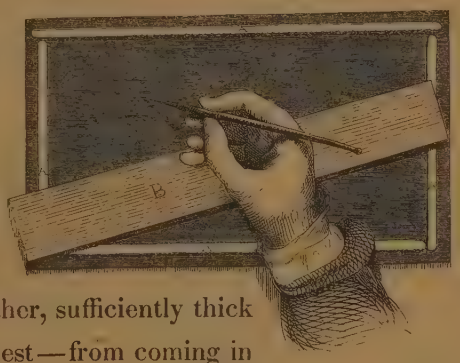
13. As the precise degree of heat which should be given a plate in laying an etching-ground is a matter of much importance, and somewhat difficult to regulate, without experience, the following surer means of conducting the operation may be advisable. Procure a water-tight box of tin or copper, about say a foot wide, eighteen inches long, and from two to three inches deep, with a small spout at one end, by which it may be filled with boiling water, and by which the steam may escape, if it be found necessary to keep the water to a boiling-point by placing a spirit-lamp beneath it. On this the plate may be laid, not only to heat, but to remain throughout the process of laying the ground, with greater certainty of its not getting too hot, besides being in many other respects more convenient and safe than by using spirit-lamps, etc.

14. To DRAW or CALQUE an outline or sketch of a design upon the ground, or to transfer thereto an elaborate drawing, which may be required to direct the artist in his work, without scoring through the ground, or exposing the metal, may be done in various ways. The learner may be advised in his first trial to make a slight but careful tracing of his subject upon *tracing* or transparent paper.* Adjust this tracing to its required position on the plate by means of bits of wax

* Very good and serviceable tracing-paper may be made by rubbing over a sheet of tissue-paper, with a soft rag or bat of raw cotton, a mixture of equal parts of boiled oil and spirit of turpentine or of mastic varnish, which must afterward be hung in the sun for a day or two, to dry.

on the margin, or at the corners, beneath which slip a piece of tissue-paper, prepared by being rubbed over with red chalk, or vermilion, on the side next the ground, and with a moderately hard pencil, or a blunt etching-point, retrace the whole, which, upon removal of the tracing and prepared tissue paper, will be found accurately calqued and repeated on the ground, without having broken through it, or touched the plate. Artists who are sure of hand, and experienced, often sketch in at once their design upon the prepared tissue-paper, or upon another piece of thin paper laid over it, with a lead-pencil, without a tracing. If a very elaborated drawing is required to be transferred to the ground, such as a careful reduction from a picture, etc., the drawing should be made upon smooth writing-paper with a moderately hard pencil (F—H or H—B), which is then to be well damped, adjusted face to the ground in its proper position, and passed through a copperplate printers' press, and the drawing is transferred to the ground in clear, silvery lines, with the advantage also of being reversed.

15. Previous to beginning with the etching, a rest for the hand should be provided, so that it may not in the progress of the work rub against the ground. A sort of bridge, made of a thin strip of wood, or a broad ruler, with supports at each end, of a proper height, is sometimes used for the purpose. An equally effective and in some respects more convenient method is, to attach to the margin of the plate, by means of wax, narrow strips of soft wood, of millboard, or, still better, of stout, solid leather, sufficiently thick to prevent a ruler laid across—upon which the hand may rest—from coming in contact with the ground.



16. The plate properly prepared, the ground successfully laid thereon, the design traced in, and a conveniently-arranged desk and blind provided, the etching-point may be taken in hand, and the work commenced: in the progress of which we would rather leave the artist to the guidance of his judgment, skill, and ingenuity, than attempt to offer precepts for his direction which may be more effectively inculcated by trial, practice, and observation of the works of others. To say that there are not difficulties to be overcome in the attainment of excellence in etching, would be to mislead. How successfully, however, all may be met by a right spirit of perseverance, those who have given it fair trial know full well. Everything depends upon the skill of the artist in design, his knowledge of the power and effect of lines in representing forms and textures, lights and shad-

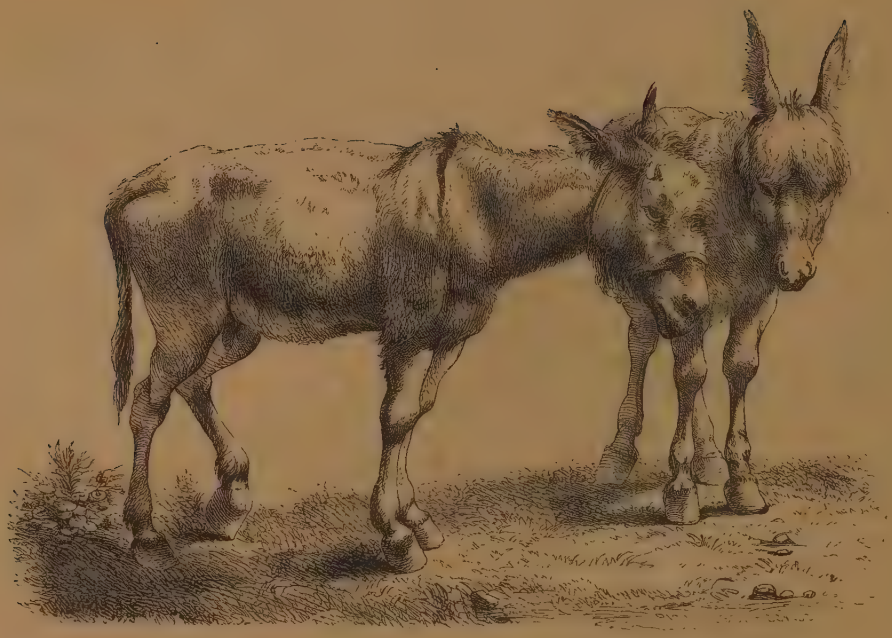
ows; and accordingly, as may be the maturity of his capacity in these respects, will be the measure of his success. Let him not look too ambitiously to emulation of the mechanical dexterity of the engraver, but rather seek suggestions which will prove more available to him from artist-etchings.

By engravers the etching-needle is much and efficiently employed. Almost all the lines in Landscapes are thus laid in. The highly-finished Landscapes of modern engravers are almost entirely etchings, as well as a great deal of all other subjects, especially in backgrounds and accessories.

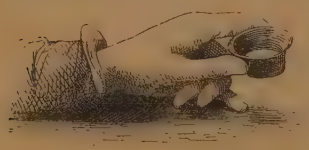
17. It is advisable that the beginner should try simple subjects first—such, if he can obtain them to copy, as some good specimens of *artist-etchings*, in which the management and effect of lines are obvious, and in which there are few dark and confused masses. It is well also at first that he should not embarrass himself by attempting to reverse his copies, so that when printed they may have the same direction as the original. His efforts should be favored in every way in gaining progressively imitation and practical knowledge of the means as well as of the capacity of the art. Heads and figures of animals—trees and groups of foliage—are particularly well adapted to early attempts.

C. RE'NHART.

CARL DU JARDIN



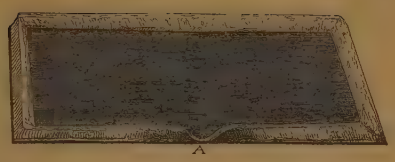
18. The etching completed, it should be carefully examined, and any accidental scratches or erroneous lines stopped out with a varnish made of *Asphaltum* dissolved in *Spirits of turpentine*, applied with a camel's-hair pencil. Or, where the corrections are trivial, a little of the ground may be taken off the margin with a camel's-hair pencil moistened with spirits of turpentine, and neatly touched over the part. For this purpose a magnifying-glass may prove of much assistance, as indeed it may be employed to advantage in many if not in all parts of the work. Engravers make more general use of the magnifying-glass than artist-etchers: how much more advantageous it might be for the former to use it less, and the latter more, may be profitably considered.



The plate has now to be made ready for the acid by a wall or border of wax.*

19. To apply the Bordering-Wax.—Work it in the hands, or in tepid water, until properly ductile. Then form it into strips of from half an inch to an inch thick, according to the size

* Bordering-wax may be made by melting together, over a slow fire, one pound of *Burgundy Pitch* and five ounces of common *Beeswax*. When melted, add a little olive-oil. After the mixture has become somewhat cool, pour it into water, and work it well with the hands. — A mixture of five parts of *Beeswax* and one of *Venice Turpentine*, treated in the same manner, makes very good bordering-wax.



of the plate. While warm, press it down evenly around the margin of the plate with the thumb, and thus mould it into a complete and water-tight wall, observing to leave at a convenient place a spout by which the acid may be poured off. Test the security of the wall by flooding the plate with water, and after a few minutes pour it off by the spout as you would do the acid.

20. The Acid almost universally employed for *biting in* copper is *Nitric Acid.* Other mixtures are sometimes used, but for most if not for all purposes of the etcher, nitric acid diluted with water answers every requirement. The acid should be kept in a glass bottle, with a ground-glass stopper. Provide a similar bottle, with a large mouth. In this mix about one part of pure acid with five parts of water. Pour as much of this mixture over the plate as will cover it to the depth of at least a quarter of an inch, and let it remain for the biting of the delicate parts from ten to twenty minutes. Immediately on pouring the acid mixture on the plate, the effect of the corrosion, which takes place in the lines, will be perceived by their assuming at first a greenish-white appearance, and afterward by the formation thereon of minute bubbles, which must be gently swept off, as they accumulate, with a broad camel's-hair brush, or a feather. A sufficient depth of line having been obtained may be ascertained by pouring off the acid, washing the plate with water, and carefully drying it with a soft towel or blotting-paper, and leaving it to the air for a few moments, and then scraping off a small portion of the ground from some unimportant place. Many give their plates but one biting, and rely upon after-expedients in their completion, while others manage by means of the acid to produce the utmost delicacy and at the same time the greatest depth of line. After a first biting, all such parts as are found to be sufficiently deep are stopped out with varnish, for which purpose that of asphaltum and spirits of turpentine answers very well. This soon becomes dry, and as thoroughly protects the metal of the plate from the action of the acid in an after-biting as the original etching-ground. The acid is again poured over the plate, and an increase of tint is given to such parts as may require it, which are again stopped out as before. The process is thus carried on in repeated bitings until a sufficient depth is obtained for the darkest parts.

21. The wall is now to be removed, by gently heating the back of the plate, and the ground and varnish to be washed off with spirits of turpentine. The plate is then to be rubbed over with the oil-rubber, when a pretty correct judgment may be formed of the success of the work, and which may be further verified by a proof from the printer.

22. Many may experience disappointment in seeing the first proof of their first work—some that it should be no better, others that it should be so well; some may wonder at their failure after much pains, and others marvel how they have been so successful. To all we say, try again.

If, on examination of the proof, the whole or parts of the etching may appear too feeble, although the process requires a good deal of nicety, the plate may be *rebitten*; that is, a ground may be replaced over the plate, by which its smooth surface may be protected from the acid, and at the same time the lines left exposed to its action.

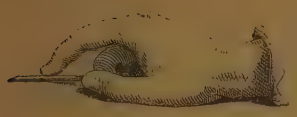
23. To rebite a Plate—first wash it thoroughly with spirits of turpentine, then with lye, and lastly with water, carefully drying it with a clean rag. It is then to be heated as in the first instance. Have ready and heated in like manner another clean copper plate. On this melt and distribute a small quantity of etching-ground, as before directed. Then, with the silk *dabber*, not overcharged with the ground, proceed by light and regular touches to cover the plate to be rebitten with it, but at the same time leaving the lines clear. To this end great caution is necessary, lest the plate get too hot, in which case it will be very difficult to prevent the ground from flowing into the lines; and, if not hot enough, the ground will be so imperfectly applied to the plate in general as not sufficiently to resist the action of the acid. To lay a good rebiting-ground requires both experience and dexterity. In laying a rebiting-ground the hot-water box will be found particularly serviceable (13). The ground successfully relaid, the process of biting in may be proceeded with as in the first instance.

If only certain parts require to be increased in depth, a full ground may be laid over the plate, covering up equally the lines with the rest of it. The ordinary etching-ground will generally serve for this purpose, although in many cases it may be desirable to employ another through which the work on the plate may appear more clearly.* In such cases (as also in a rebiting-ground), the plate should not be blackened by smoking it with the taper. With care, the lines which may require to be increased in depth may be re-entered with the etching-point and rebitten. Or, recourse may be had to the graver.†

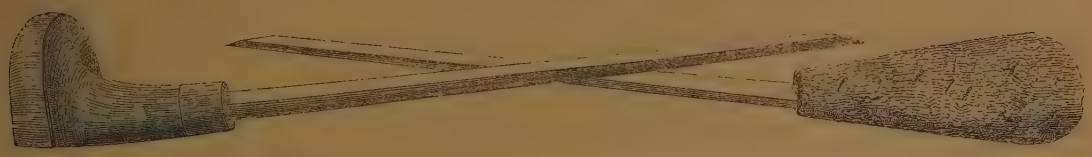
* Transparent etching-ground may be made by combining together over a gentle fire one ounce of *common rosin* and *two ounces* of *virgin wax*. When cool it is ready for use, and is laid as the ordinary ground.

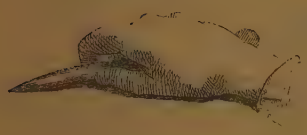
A good coating of mastic varnish, applied with a brush, and suffered to remain a few hours, makes a very good, transparent etching-ground. If left, however, for any length of time on the plate, it will become brittle.

† It may be recommended to learners to make memoranda of their experiments in conducting the process of biting and rebiting their plates—as to the strength of the acid employed the time that it is left on the plate, and the parts which are acted on at each biting. Such memoranda, compared with proofs from the plates, will be found of great service in directing future operations, and also as guards against failures.

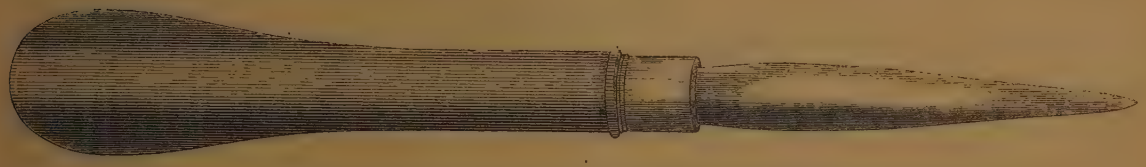


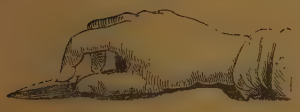
24. Gravers are employed of different forms, square or lozenge. For the purpose of the etcher, the square tools are most to be recommended.





25. The Burnisher, if portions of an etching are found to be too dark, may be often very effectively employed in reducing the depth and width of lines, as well as in graduating or entirely erasing tints or lines if they are not too deep. In many ways this instrument may be used to advantage which practice and trial of its capacity for service will suggest.



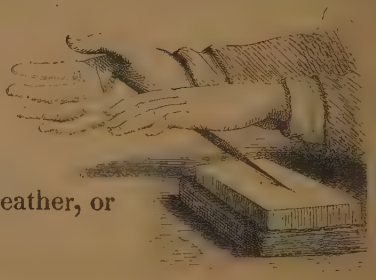


26. The Scraper is generally employed to cut off the burr made by the turning up of the metal on the sides of lines which are but slightly bitten or only dry pointed.

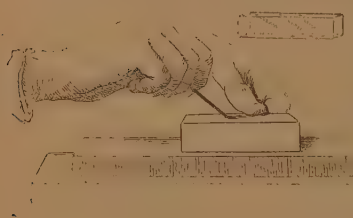
27. Dry-pointed Lines are such as are made on the bare copper with the etching-needles, without being bitten in with the acid. They are often very effectively employed in retouching and finishing a work, especially in light and delicate parts.

28. Many employ etching-points of several degrees of sharpness, so as to produce at one biting a greater variety of lines and texture, and by scoring the point lightly or deeply into the metal, which is much more readily done on copper than on steel.

29. To sharpen the Etching-Point, requires some little dexterity. Cut in your oil-stone a slight groove, rest the handle of the instrument in the hollow of the right hand, and, placing the fingers of the left across it, by a compound motion backward and forward—at the same time rolling it in the groove—an even point may be produced, which should be slightly rounded or deprived of its extreme sharpness on a strap of leather, or on a bit of soft wood coated with emery and tallow.



30. To set the Point of a Graver, with an equal bevel, may also cause some trouble to a beginner. To keep the graver steady and on the oil-stone, have a small block of hard wood, about three inches long, and three fourths of an inch or an inch square, pierced with holes, into which the graver may be firmly retained at a proper angle, yet sufficiently free to be pressed on the stone in grinding it away.



Great caution is requisite, in using the graver, that the point is in good condition, lest it lose its hold on the metal, and be driven mischievously across the plate. The state of the point may be tested by touching it gently on the thumb-nail. By the same means, that of etching-points may be ascertained.

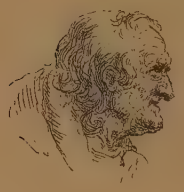
31. Gravers and etching-points as they are purchased generally require that the temper of the metal should be reduced, which may be ascertained by the brittleness of their points. To reduce their temper, either hold them in the flame of a lamp, or on a piece of hot iron, until they assume an orange or straw colored tint, when they should be instantly plunged into oil or tallow. If heated until they take a bluish tint, they will become too soft. The degree of reduction of temper, or hardness, of steel, which takes place under the application of heat, is very clearly indicated by the change of color which occurs on the polished surface of the metal in the following order, according to the intensity of heat to which it is subjected, viz.: straw-tint—citron—golden—orange—purple—pigeon's-wing—deep blue—dull blue—bluish gray—and gray.

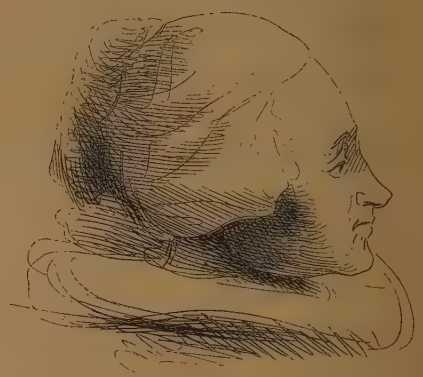
32. Of the various expedients of which the etcher may advantageously avail himself, it is useless to make mere mention. Were it possible for us to place before the learner as numerous specimens as we desire of the many admirable works of painters and others who have exercised their skill and genius in this delightful and beautiful application of design, they might easier see for

themselves, than we can explain to them, the extent of its capacity. There is no subject, however delicate or however forcible—from the faintest outline to the most elaborate finish and depth of shadow, or effect—that may not be expressed by etching, and that too with all the ease and feeling of an original design.

In urging upon both artists and amateurs trial of their strength with the etching-point, we know we shall be acquitted of over-earnestness in the matter by results—not only by what they may be able to accomplish therewith, but by the advantages which they will hence derive in the practice of any other branch of art to which their impulses may be more singly and earnestly directed. To some, perhaps, there may appear to be involved in the practice too great an amount of mere mechanical manipulation to suit their tastes or convenience; and true it may be that polishing copper plates, handling corrosive and staining acids, and tenacious varnishes, are not exactly suited to the delicacy of a lady's fingers; yet, for all that, even they need not be intimidated from trying. The operation of etching may be conducted with as much neatness, and as free of annoyance to one's self and to others, as any other of the numerous "modern accomplishments" professed and taught in our schools, though seldom practised to any valuable purpose out of them. In all our cities there are engravers from whom may be obtained plates with grounds ready laid thereon, etching-points and tools in proper condition for use, and who may be willing to relieve amateurs even of the trouble of biting in their plates. This may be well enough for a beginning; but there is little venture in the prediction that, if they go but a little further, they will be very unwilling to relinquish any part of the process to others.

On the other hand, there may be many who possess the inclination and capacity to make trial of etching without having facilities for procuring the few necessary instruments and materials required. Such even need not be deterred from the experiment, and may rest assured that the secret of success lies more in the artist's capacity of mind, and hand, and eye, than in the perfection of his tools. A common *darning-needle*, set in a wooden handle, makes as good and efficient an *etching-point* as the best that can be bought. A three-sided *saw-file*, ground down to a point at one end as a *scraper*, and at the other into shape, and well polished on a hone, and finally with emery upon a leather strap, as a *burnisher*, may as well combine both in one instrument. Any country blacksmith, from an old file, can shape a *graver*, and temper it rightly too; possibly not as well as Fenn of London, or Renard of Paris, yet still to serve. Even for copper plates, upon an emergency, there is scarcely a village in our land where they could not be prepared, to meet the requirement of a determined will to have them, by planishing with a smooth-faced hammer on an anvil—levelling with pumice-stone and water—and finally polishing by a progressive application of charcoal, emery, whiting, and the oil-rubber.





Rembrandt
1641

33. There is a recently-appropriated application of the etching-needle, which, by the aid of the photographic process, on many considerations offers even greater facility of execution, and advantages in other respects over etching on metal, both to amateurs and artists.

A plate of glass is prepared—by first washing it thoroughly with the lye of wood-ashes, or a solution of potash in water, so as to render it perfectly free from greasiness, and to insure the adhesion of an even-coating of white-lead, finely ground in starch (not made too thick), and applied with a large soft brush. This coating, or ground, should not be laid too thick, but just sufficiently so to cover the glass, and to exclude the passage of light. The state of the ground may be readily tested by holding the plate between the eye and the light. When the ground is perfectly dry—the plate of glass should be laid upon a piece of black cloth, or paper, and the design made thereon with etching points of various degrees of sharpness, according to the nature of the work and effect desired. Every line and touch will appear in black with the utmost distinctness—and, by occasionally reversing the plate, the effect will of course appear equally clear in that position.

The drawing completed: the glass-plate is then to be gently immersed (in a horizontal position) in a bath composed of a solution of sulphurated potash (liver of sulphur) and water. In a few minutes the coating of white-lead will become intensely black—leaving the lines clear. As soon as this occurs the glass must be gently lifted from the solution and allowed to become perfectly dry. A thin coating of varnish may then be passed, or better still, floated over the whole by which the ground will be rendered more firm. When the varnish is dry, the plate may be printed from, precisely in the manner of a photographic negative.

One of the greatest advantages of this process is, that drawings and sketches may be made directly from nature with the utmost facility. They can be worked upon by any light and under any circumstances that a design on paper can be made. Almost any number of impressions may be repeated with the utmost exactness, and much effectiveness may be further given in the process of printing by means which will be obvious to those familiar with that of photography—of whom the artist may readily learn all necessary practical details—which are extremely simple.

There are other methods of preparing the glass-plate, etc.—but that given we have found to be not only the most simple but in many respects most effective and certain of any with which we are familiar.

34. The process of etching on copper embraces the general principles of its application to all other metals, with such variation as their peculiar natures may require. Steel presents some difficulty, on account of the great uncertainty which attends its biting and rebiting, the difference in

the texture and degree of hardness of different plates, and other peculiarities, which experiment will render obvious, and practice and perseverance best direct to the means of overcoming. The various mixtures and combinations of acids which have been recommended for biting steel, would fill pages; and, after all, it may be very well doubted if, as a reliable corrosive, anything can be better adapted to the requirement of the etcher than nitric acid, more or less diluted with water. We know, indeed, that some of the best etchers on steel, after experimenting with endless recipes, have arrived at this conclusion. The proportions which may be recommended are from sixty to seventy drops of nitric acid to a pint of water. Less acid is even to be advised for early experiments, and great precaution is necessary. For the faintest lines, even on and off may be enough, while one or two minutes may suffice for the stronger lines. Steel plates, after being bitten in, should be very carefully washed, and dried as soon as possible, to prevent the rusting of the lines; and, after the removal of the ground, the oil-rubber should be instantly applied. When laid aside for any length of time, they should be heated and covered with tallow or wax, or a coating of asphaltum-and-turpentine varnish.

35. The various and effective applications of etching, in many of the ornamental arts, render a practical knowledge of the process of further importance. Thus the most highly-artistic designs may be wrought directly on metals with a degree of freedom and beauty attainable by no other means. In cases where an ordinary etching-ground can not be conveniently laid, mastic or any other such varnish may be employed, with the addition, if necessary, of any coloring substance, such as lamp-black, asphaltum, oxyde of bismuth, etc. For biting in an etching on brass or silver, nitric acid diluted with water may be used. Gold is acted upon by nitro-muriatic acid *(aqua regis)*. Designs may be drawn and stained upon ivory, bone, wood, etc., with great ease and effectiveness, by employing a staining solution in like manner that a corroding acid is used in biting in metals. Even glass, agate, rock-crystal, and silicious stones, may be etched upon by the employment of fluoric acid. Stones of a calcareous nature are acted on by nitric acid.

36. Soft-Ground Etching was formerly much employed, to imitate chalk or pencil drawings; but, since the invention of Lithography, it has fallen into disuse. The ground for this method of etching is made by adding to three parts of common etching-ground one part of hog's lard, for use in winter, and less lard in summer. It is laid, and blackened by smoking, as the hard etching-ground.

Having prepared an outline of the subject, on a piece of smooth and thin writing-paper, somewhat larger than the plate, damp it thoroughly, spread it carefully over the ground, and glue the

edges firmly on the back of the plate. When dry, it will be perfectly smooth. A rest for the hand must be provided (15). Proceed to draw the subject on the paper, with a moderately hard pencil (F. H. B., H., or B.), according to the temperature of the weather, the nature of the work, and the degree of hardness of the ground. The drawing completed, lift the paper carefully from the plate, and every touch and trace of the pencil will be marked by the sticking of portions of the ground to the paper, and a corresponding exposure of the copper. A wall is then to be placed around, and the plate is to be bitten in precisely in the manner of a line-etching. According to the success with which the acid is applied, will be that of the work. If too faint, a rebiting ground of hard etching-ground may be laid, and the plate managed precisely as has been previously indicated in cases of hard-ground etching.

37. ETCHING ON STONE is so similar, as far as the artist's hand is required, to etching on copper, that any one who has practised the latter will find little difficulty therein. Lithographic printers are always ready to supply the stones prepared for the work.

DRAWING ON STONE, or Lithography, is of an easy acquirement to any one who can use the pencil or crayon with facility.

38. ENGRAVING IN AQUATINT will be readily understood and may be successfully practised by any one familiar with the use of the camel's-hair pencil in water-colors, and with the process of biting in an etching by means of aquafortis.

Grounds for aquatint are either laid by sifting over a plate finely-powdered resin, which, when partially heated from the back of the plate, gathers in minute granulations close together, but leaving sufficient space between each other to allow of action of acid upon the metal thus left bare; or, by pouring over the plate a varnish, or solution of resin in alcohol, which, after the draining off and evaporation of the fluid, leaves it in a similarly granulated state.

A proof from a plate thus prepared, and subjected to the action of acid, would, if closely examined with a lens, present the appearance of an elaborate network of lines. As the plate may have been more or less subjected to the action of the acid, these lines would be more or less deep and broad, and consequently producing a tint more or less intense, from the imitation of the faintest stain or wash, of Indian ink, to black. To arrest the action of the acid at a proper moment, so as to secure certain gradations of tints, by means of "stopping out" with an acid-resisting varnish, and at the same time to give to such tints their proper form, comprises the motive and effective application of aquatint.

Although this method of engraving is not so much practised as formerly, it affords many

advantages which recommend it to the consideration of artists and amateurs, whether employed alone or in combination with etching, etc. With skilful management, it is certainly capable of very effective results, and is particularly applicable to landscape and architectural subjects, or to any purpose of engraving in which the effect of flat tints, or washed drawings, may be desired to be expeditiously reproduced. Simple as the process of aquatint engraving is, however, it involves so many delicate operations, in laying the grounds, applying the acids, stopping out, etc., that, unless those who may desire to experiment therein can avail themselves of the instruction of a practical engraver, we would advise them to refer to some standard work upon the subject for more ample directions than we can take space to supply.* It is scarcely likely that many would be induced to make trial of aquatint engraving for merely amateur purposes, and the few who may have more practical objects in view will naturally desire all the information on the subject that can be obtained.

39. MEZZOTINT ENGRAVING is particularly adapted to the capacity of painters and artists skilful in design. A mezzotint plate prepared for a design presents a surface entirely roughened by minute indentations in the metal, and by a burr raised by the tool with which they are made. A proof taken by a press from a plate in this state would present an intensely black tint. If the slightest portion of the ground be scraped off, it would be marked in the proof by a fainter tint which would be more or less intense according to the amount of burr and indentation removed; the untouched ground giving the deepest black, and white being only attainable by entirely removing the ground and burnishing the metal. The work of the artist, therefore, consists in availing himself of the nature of the ground to scrape out his design or picture from black to white, which is effected by means of lancet-shaped scrapers and burnishers of various forms and sizes.† Throughout the process, a very correct idea may be formed of the state of the plate, which under the blind of tissue-paper (7) is shown almost as clearly as it would be in an impression on paper from the press.

40. Mezzotint engraving, from the picture-like yet in many respects coercive character of the process, as well as its capacity, is more effectively applicable to original designs than indiscriminate copying, unless the original works in effect and character harmonize with and come within the

* "The Art of Engraving," by T. H. Fielding, London; "*Nouveau Manuel Complet de Graveur*," etc., par M. Purrot, Paris; etc.

† Scrapers should not have too acute an edge. In that state they are not only liable to scratch the plate injuriously, but also very soon to become dull, and in other respects to work to disadvantage. After whetting them on the sides, they should be held on the oil-stone at an angle of about forty degrees, and in that position they should be gently ground to an even bevel.

compass of its capabilities. Hence the artist who works from his own designs, or realizes it directly on the plate, does so with advantage over the mere engraver who is restricted by the exactions of his model. There is no species of engraving in which, for successful practice, more depends upon the skill and dexterity of the artist, and none less affected by accidental difficulties.

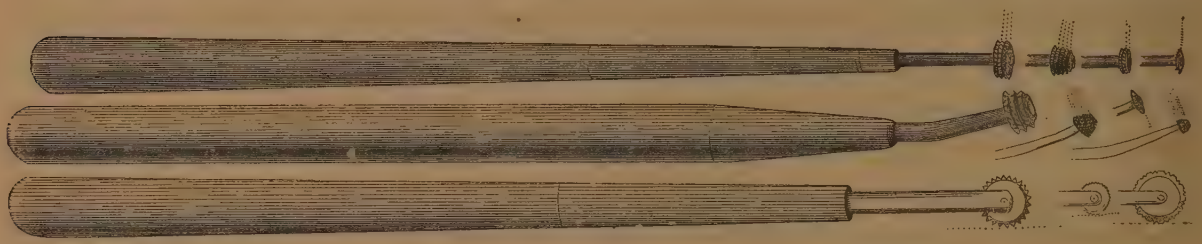
41. With professional engravers it is a very common custom to commence a work by etching a general outline of the subject in the plate, in a dotted or broken manner, to harmonize with the character of the ground, which is afterward laid thereon. Many carry this operation still further by the employment of the graver, in adding force and appropriate texture to certain parts in which such requirement may be anticipated. Artist-mezzotintists, however, particularly those who work from their own designs, most generally prefer to endeavor first to realize their designs from the mezzotint ground, holding recourse to etching, etc., as a reserve, or after-process. The ground being prepared, they sketch or trace thereon an outline of the subject with fine red or white chalk, or with a soft black-lead pencil. Further to secure such outline, it may be slightly but firmly dry-pointed with an etching-needle, by lines of great clearness, without injury to the ground, unless scored too deeply. As a precaution against accidental encroachment upon the parts and masses of intense black, which it may be desirable to preserve untouched by the scrapers, it may be prudent to touch or draw in such parts with Indian ink, asphaltum varnish, or something of the kind, especially in the early stages of the plate. After the design has been in a sufficient degree developed upon the plate, such guards will be no longer necessary, and may be washed off. This expedient may be further resorted to, not only with regard to the deepest tints, but also to subordinate masses.

The operation of scraping down the ground, from dark to light, should be conducted with the utmost caution, and with constant reference not only to the effects of light and shadow, but also to the details of the subject. The scraper should not be too vigorously employed; and the whole process should be gradually carried on by gentle and well-guarded erasure of the ground. Burnishers should only be used on the lightest parts, and after the burr has been entirely removed. Proofs may be taken at any period of advancement of the plate.

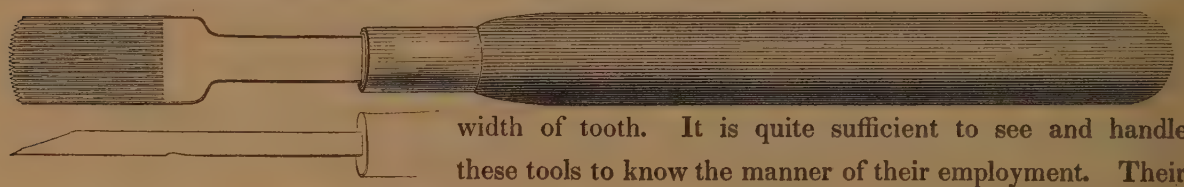
It is certain that very beautiful and effective results have been produced by pure mezzotint, without recourse to any other process. Still, much that may be not only difficult if not impossible to produce by mezzotint alone, such as extreme sharpness and decision of outline, texture, etc., may be added after the plate has been advanced as far as it can be by its means, by laying over the whole a transparent etching-ground (23), through which the work may be sufficiently distinct to add whatever touches, force, or further finish, that the etching-needle can supply. It may be

further stippled in the lighter parts with the graver, but great care is requisite in so doing, especially in removing the burr left by the graver. As all, however, who may attempt mezzotint will be naturally led to the examination and study of the numerous productions in that style that can be so readily obtained, and in which the various methods and expedients that have been resorted to in their execution, a little practical experience will render easy of discovery, they may hence learn more of the art than any written directions can afford them.

42. Roulettes of various forms, character of teeth, and effect, are often advantageously

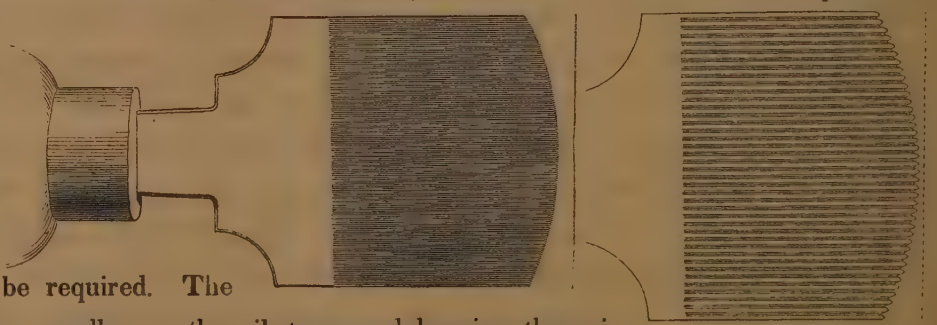


resorted to, to recover texture and tints, or to vary the character of the former according to the nature and requirement of the subject; also Shading-Tools of different sizes and degrees of



width of tooth. It is quite sufficient to see and handle these tools to know the manner of their employment. Their efficiency must be learned by use of them.

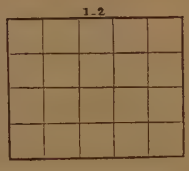
43. To lay a Mezzotint Ground is an undertaking that few are advised to venture upon as an essay in the art, unless it be impossible for them to procure one ready prepared. It is, however, rather a laborious than difficult process, requiring the exertion of much care and patience. The tools with which grounds are laid are called Cradles, and are of various sized teeth according to the nature of the ground for which they may be required. The



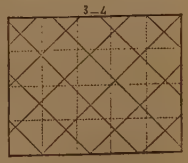
method of setting these cradles on the oil-stone, and keeping them in proper order in using, will be readily understood.

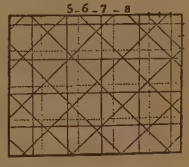
The feeling of a cradle to the hand, and its effect upon the surface of a plate of metal by a rocking motion, will clearly indicate its purpose and action, which will be further exemplified by impelling it gently forward, at the same time that the rocking motion is continued. This forward motion, if extended across the plate in a direct course, leaves a track of dots or indentations therein, corresponding to the teeth of the cradle, and at the same time a slight burr around each dot. Such courses, repeated in every direction over the plate, produce a perfectly and equally roughened surface, capable of holding a sufficient quantity of ink to produce, from the press, an intensely black impression on paper.

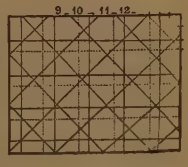
As it is of much importance that these courses should be laid with the utmost regularity, and that all parts of the plate should be equally acted upon by the cradle, some method may be found necessary in regulating them. To this end various expedients may be resorted to, of which the following is one very generally adopted:—



First, with fine charcoal, chalk, or pencil, divide the plate by a set of parallel lines, the space between each line being about one third the width of the cradle. Start the cradle in the middle of the spaces, and work it forward with a regular and steady pressure, at the same time rocking it, as directed, until the plate is entirely worked over in one direction. For the *second* course, draw a set of parallel lines, of the same distance apart as the first, at right angles thereto, and proceed with the cradle in like manner. The *third* course requires to be laid in a similar way in all other respects, except that it be diagonal to the first; and, consequently, the *fourth* will be equally in a diagonal direction. For the *fifth* course, draw a set of parallel lines upon the basis of a line one third of the space between those already drawn, and either above or below those of the first course. These are to be again crossed by others at right angles thereto, and at a point one third of the space between the parallels already drawn. A set of parallels, diagonal to these, will give the limits and direction of the *seventh* and *eighth* course. For the *ninth* and *tenth* course, the basis of the remaining third of the division of the parallels is to be taken, and so on their diagonals for that of the *eleventh* and *twelfth*—observing that each set of parallels should be worked over by the cradle as they are drawn. These twelve single courses make what is called one *complete course*; but the plate will be found to be not sufficiently wrought over to produce a full and reliable ground. Whatever traces of the lines remain may now be washed off with spirits of turpentine; and,



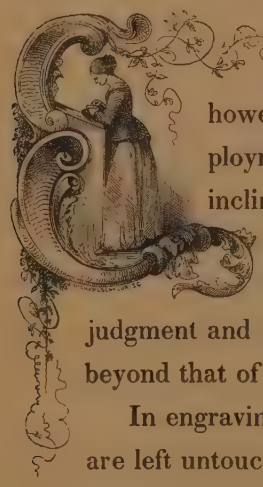




according as the number of full courses may be requisite, must be the premises upon which the others are started—avoiding, as far as possible, ever to repeat a track of the cradle precisely in the same direction as that of one already made. For a well-prepared ground, often five or six full courses, each of twelve sets of single tracks, may be required.

44. It is advisable that a first trial in laying a ground should be made on copper, as it is less liable than steel to break the teeth of the cradle, which can only be avoided by preserving the utmost steadiness of hand. The cradle should always be kept in perfect order. The disadvantage of copper for mezzotint is that of its want of capacity for yielding more than a very limited number of good impressions; and, further, in requiring the utmost precaution in handling, as the slightest scratch or bruise on a mezzotint ground may seriously injure it. For the latter reason, however, it may not be considered objectionable for beginners, as it thereby exacts more neatness and carefulness, leading to habits which, if not equally requisite in working upon the harder metals, are still important.

45. Engraving in Line and Stipple, being more professional in character, and coming less within the capacity and probable purposes of the artist and amateur, can scarcely be considered subjects for treatment in an elementary work, however skill in design and comprehension of the leading principles of art may be essential to their successful practice.

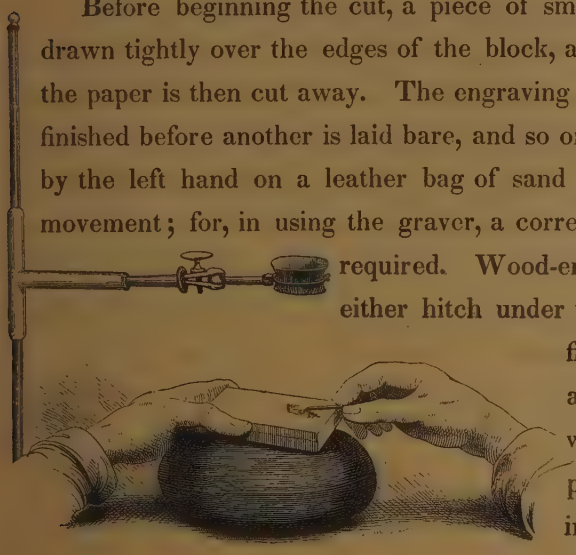


ngraving on Wood is also a branch of art which few artists or amateurs would desire to undertake, unless for the satisfaction of experiment. Many, however, possessing taste and skill in design, as well as those who delight in employments exercising delicate manipulations, might most profitably indulge their inclinations in its practice. To whatever extent this method of engraving may involve a great and absolute requirement of a certain amount of purely mechanical dexterity, it equally requires the exercise of a degree of proper judgment and comprehension of the principles of design, which deservedly elevate the art beyond that of a merely mechanical employment.

In engraving and etching on metal, lines are expressed by incision; while on wood they are left untouched by the graver, and in relief. The method by which impressions are made from them is also entirely different, being precisely the same as from ordinary types. Hence its advantages over all other styles of engraving for book-illustrations, as they can be printed with the letter-press at one and the same operation.

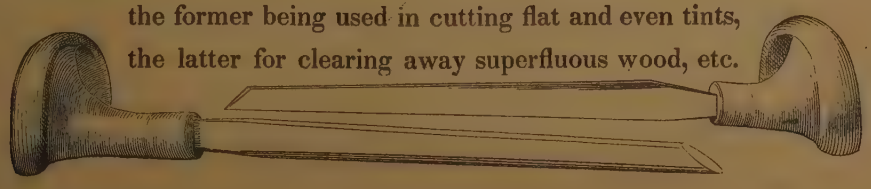
Box-wood is most generally employed for wood-cuts. The blocks are sawed from well-seasoned logs, crosswise the grain, after which they are planed and dressed down to a thickness equal to the exact length of types, and further prepared for the drawing by rubbing over with pumice-stone and water or Bath brick, to which may be added a slight coating of white lead, or of Chinese white. The white rubbed off a glazed card, with a broad brush with water, and applied to the surface of the block by a rapid motion, which should be continued until the moisture is absorbed, produces an admirable preparation for the drawing, which is required to be made directly on the block.

The drawing may be made in various ways—either entirely with a hard lead-pencil, or by a combination of penciling and washing in Indian ink, etc. Many of the best draughtsmen for wood-engravers in Europe, instead of using Indian ink, make a very effective application of the stump. Drawings made entirely by pencil-lines are generally engraved in fac-simile, the skill of the engraver being mainly exerted to preserve them as far as possible without variation. In washes and flat tints, he must necessarily exercise his judgment in the selection of their character.



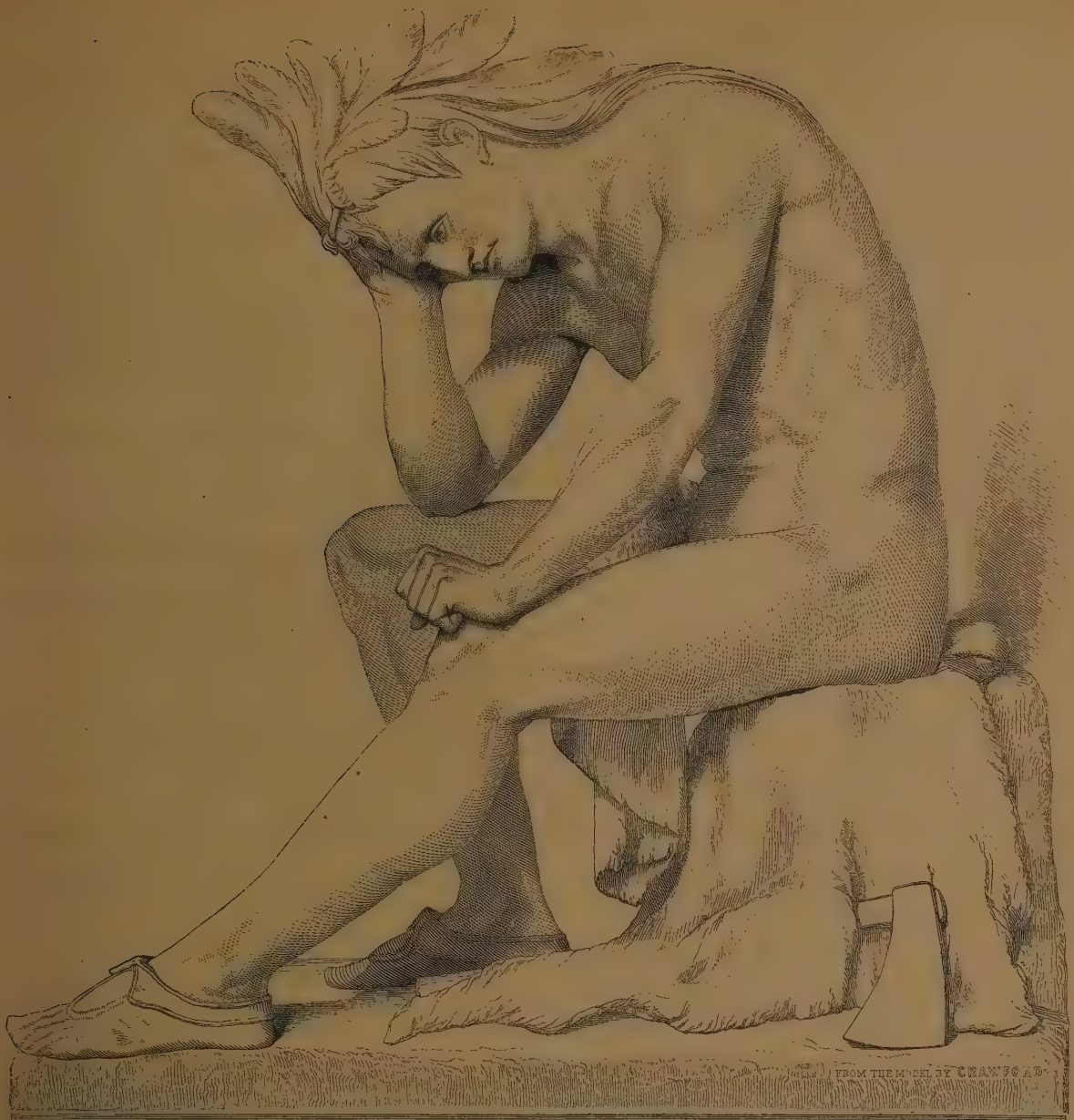
Before beginning the cut, a piece of smooth paper is laid over the face of the drawing, drawn tightly over the edges of the block, and firmly pasted to its sides. A small portion of the paper is then cut away. The engraving of the portion of drawing thus exposed is entirely finished before another is laid bare, and so on until the whole is completed. The block is held by the left hand on a leather bag of sand or shot, so as to allow the utmost freedom in its movement; for, in using the graver, a corresponding action of both hands may be frequently required. Wood-engravers generally work with a lens, which they either hitch under the eyebrow, in the manner of a watch-maker, or fix in a stand with a moveable arm, and a ball and socket-joint, or by some such contrivance, by which it may be kept in a proper and convenient position; to be employed or not, as may be required in the progress of the cut.

47. The Gravers employed for wood-engraving are similar to those for metal. They are, however, set with more acute points. Tint-tools and Gouges of various sizes are also requisite; the former being used in cutting flat and even tints, the latter for clearing away superfluous wood, etc.



48. To take a Proof from a Wood-cut, without a Press.—With a dabber of silk, kid, or Indian-rubber, gently but evenly cover the lines with type-printer's ink, avoiding its application to excess. Lay upon an open book, or upon several folds of paper, a piece of India paper of a proper size, which should be previously rubbed smooth with an ivory folder. Breathe on the India paper, to give to it a slight degree of moisture, and gently press the inked block thereon; to which it will at once adhere. Next, turn the block face upward, and, placing over the India paper a card, or slip of stout paper, proceed by gentle friction thereon with an ivory folder, or a flat burnisher, to impress the engraving upon the India paper; carefully guarding against injuring the sharpness of the cut by pressing too heavily, and regulating the degree of friction by the nature of the work—the darker and more solid parts requiring more, the fainter and those in which the lines are more widely separated, much less.

49. For working by lamp-light, a glass globe filled with water is very frequently employed—upon which there is a recent improvement of a hollow glass bull's-eye filled with water and set upon a convenient stand, which is much better adapted to the purpose, not only of the engraver, but to all who are compelled to make use of lamp-light in their work. With one good lamp in the centre of a table, any number of persons that could find place around it may, each being provided with one of these bull's-eyes, be as well accommodated as if they had the lamp to themselves. By slightly tinging the water with blue vitriol, a light more pleasant and less trying to the eyes may be produced. After all, however, we would advise, not only wood-engravers, but all others engaged in the pursuit of art, to be up early in the morning—to make the most of daylight—and to let lamps light their hours of rest and recreation rather than those of study or labor.



CHAPTER X. MODELING

Modelling is the art of imitating forms, or of giving shape to ideal creations, in plastic and soft materials, such as clay, wax, plaster, etc. The model embodies the design, and its perfection constitutes the chief labor of the artist's mind and hand, and forms the *pattern*, or guide, in the more mechanical operations by which statues, reliefs, etc., are produced in marble, bronze, or other harder and more durable materials.

The sculptor's art, considered in a strict sense, would seem to signify the actual process of carving any substance into a purposed form, and it is as common to speak of the achievements of his chisel as of a painter's pencil; while, in truth, the entire process of blocking out, or of casting and chiselling the rough material, may have scarcely occupied more labor on his part than the general supervision and direction of the work. To be capable, however, thus to make successfully available the labor of others in the perfection of a design, involves the requirement of at least capacity to supply the deficiency of a merely mechanical hand by that of an artist's, whenever it may be needed. To what extent the sculptors of antiquity may have bestowed their individual labor upon the best of their works that remain to us, it is not easy to decide; but it is very certain that they bear the evidence of a hand in their completion beyond the capacity of that of a mere workman. It is this that gives to their productions, in a great degree, their superiority over copies from them; and in which the reason is discoverable, that a bronze fac-simile, as far as relates to form, of the Venus de Medici, or a plaster-cast from the Venus de Milo, or the Apollo Belvidere, fails, in producing the impression of beauty and perfection, in comparison with the originals—different materials requiring not only different treatment in respect to texture, etc., but an adaptation of design and actual form to their peculiarities.

2. Excellence in all branches of art must be founded in knowledge, both practical and theoretical, of the general principles of design; and the rules and maxims, as well as skill, which may be requisite in one, if not equally, is at least to a very great extent applicable to all. Thus the sculptor who can not draw—who does not comprehend the means of expression—the harmonious arrangement, or composition, of forms, masses, and lines—the power and effect of light and shadow—is as deficient in the requirements of his art as the painter who is not familiar with the structure of the human figure, and who can not model. Practical efficiency with both rests in assimilating capacity. A drawing or picture, to approach the degree of truth requisite to excellence, should be as correctly *modelled*, in an artistic sense, as a plastic model should be correct in *drawing*. It is as commonly said, and as clearly understood, with reference to a statue, that it is well or badly drawn, as it may be of a picture that it is well or feebly modelled. The most eminent sculptors, without an exception that we can call to mind, have all been accomplished draughtsmen; and the practice of modelling, both as a means of study and as assistance in the execution of their finished works, has been always common among painters.

3. It is an error most injuriously prevalent to consider that education in the different branches of art may be limited, or economized, to such attainments as only appear most obviously requisite

to individual purposes; whereas, the strength and extent of human capacity of attainment should alone prescribe its limits.

Added to the vastness of his capacity as sculptor, painter, and architect, Michael Angelo was one of the most skilful engineers, both military and civil, of his time—a poet and a philosopher. Scarcely less accomplished was Leonardo da Vinci. Both ranked, not only among the most eminent anatomists of the age in which they lived, but by their investigations, their pens and pencils, most effectively contributed to the advancement of that important science. Raphael, although he lived not to half the number of years of either, attained an amount of knowledge and capacity in all relating to the arts of design which appears to be almost incredible. It is said that "Titian and Tintoretto, by the mere use of modelling, far surpassed those who designed statues."—"Correggio disposed of the masses of his lights and shades with an art purely natural in its foundation, but in the selection and effect altogether ideal. And he arrived at this degree of perfection by the very same path pursued by Michael Angelo, availing himself of models in clay and wax, the remains of which are said to have been found in the cupola of Parma, not many years ago. It is also currently reported that, while employed in that city, he engaged the assistance of the famous modeller Begarelli, whom he conducted thither at his own expense."—(Lanzi.)

It would be easy to fill pages with instances in exemplification of the importance to artists of general knowledge on all subjects in any way connected with their art; and further, that the acquirement of such knowledge need not necessarily interfere with, or divert the steady pursuit of, leading and individual purposes. We would by no means be understood as encouraging indecision of purpose or action in the course of study, exertions, or ambition, of the art-student; nor would we exact of him labor to weariness, or to the peril of either health or comfort. Art demands no such sacrifices of its most earnest followers, but freely and abundantly affords time and opportunity for that rest and relaxation essential to the preservation of healthful vigor of both mind and body, without the necessity of arresting or deviating from a direct, onward course.

Let the painter seek relaxation in his labors by modelling, and the sculptor by recourse to the pen or pencil. Let both go forth together to the bright and beautiful out-door world of Nature, breathe her free air, and receive strength and impulse, delight and instruction, from the refreshing influence and study of her truths, and both in their respective pursuits may reap equal profit. The limits of the walls of a studio should no more prescribe the field of study of the sculptor than of the painter. Canova was a painter as well as a sculptor. We have seen sketches of landscape by Thorwaldsen, made on the way, when he first came a student to Rome, and models by Allston, and drawings by Greenough, which would do equal credit to a sculptor in the one case as to a painter in the other.

4. Clay, of the quality and prepared in the manner in which it is generally employed by potters, is the material most commonly approved and used for modelling. When it can not be conveniently procured of a potter, it may be readily prepared by wetting it with water, and by beating and working it into a proper state of firmness. Care should be taken that it is free from stones, chips, or such like substances.

Very few tools are requisite, and these of the most simple character, which may be made by the artist himself, of ivory or bone, box, pear-tree, cedar, or any close-grained wood. Tools formed of bent wire, set into handles, are useful for cutting away the clay, and for other purposes. The most experienced sculptors employ very few tools, and rely much upon the bare fingers in modelling.

5. Wax offers some advantages over clay, particularly in small models, and for amateur purposes. From its extreme lightness, and being tougher and more adhesive, it sustains its weight better, and does not require the same attention, when the work is laid aside or suspended. By practical artists, however, clay is most generally preferred and employed.

Clay requires to be kept constantly in a proper state of moisture, especially if metal or other braces have been found necessary, which, by their not yielding to the contraction and expansion which takes place in the clay, if not kept at an equal degree of dampness, causes the latter to crack and often fall to pieces. The requisite degree of moisture is preserved by occasionally throwing water over the model with a syringe, the rose-head of which is perforated with very fine holes, something like that of a flower watering-pot, only much smaller; or by blowing it from the mouth, or sprinkling with a large brush; and by hanging over it at night, or when the work is suspended, wet cloths.

Models in which no other material than clay has been employed, by allowing them to become

gradually dry and hard, may be preserved in that state; and in cases where the masses are equally distributed throughout, or have been hollowed out so as to preserve an equal degree of thickness therein, they may be afterward baked, in the same manner as a piece of ordinary pottery.

6. TERRA-COTTA, the name given to works in clay thus treated, is a most valuable application of design to practical purposes, and may be made as well a delightful accomplishment, well suited to the exercise of the taste and skill of both amateurs and artists. By the ancients it was very extensively employed, not only in small subjects, such as figures, reliefs, architectural ornaments, vases, lamps, tiles, and domestic utensils, but also in works of larger proportions.

Clay is further capable of receiving very sharp impressions from plaster and other moulds; and, from the durable character which may be afterward given to it by the process of baking, it may be rendered for many purposes scarcely inferior to stone.

7. Figures or groups entirely insulated, as statues usually are, are technically classed as works in "*the round.*" If not thus detached from a background, they are called *reliefs;* and further distinguished, according to the degree of such relief, as *high*, *medium*, and *low relief (alto*, *mezzo*, and *basso-relievo).*

8. It is unnecessary to attempt detailed instructions or directions with regard to modelling, as all that has been or that may be said and urged in relation to the general principles of design, and their practical exemplification in reference to drawing and painting, is equally applicable thereto, with such modification as the intelligence of the artist, the material employed, and the object to be attained, may suggest. The artist who has received proper training of mind and hand in the essential requisitions to excellence in other branches—he who is already an accomplished draughtsman, or painter—has but by trial to become very soon a successful modeller.

9. The sculptor usually begins his work precisely as the painter, by a sketch—not always on paper, but in clay or wax. On this he bestows his preliminary study, as well as therein embodies the conception of his subject; often seeking, during its progress, suggestion or verification of his conclusions by reference to Nature—imbues his imagination with a clear perception of all the prerequisites of the finished work, and as well decides upon the possibility and means of their accomplishment. Having perfected the sketch, so far as may be necessary to determine the general character, proportions, and effect of his composition, he proceeds to build up the statue, in clay, of the size required.

10. According to the massiveness of the figure and the detached position of its parts, and as they may require more or less support beyond the strength and nature of the clay to supply, skeleton braces of iron must be prepared, suited to the action of the subject. These may be formed, in most cases, upon the general direction and character of the natural skeleton, and should be firmly bolted or fixed to the modelling-stand. Their protrusion beyond the surface of the model may sometimes be unavoidable, but care should be always taken that this may occur at unimportant points. The figure is then gradually developed by building it up compactly with the clay, upon the basis of generalized masses, and progressively advancing to detailed elaboration.

11. It is almost a universal custom, whether the figure be ultimately draped or not, first to model it naked, as thus that severity and truth of form, which constitute in so high a degree the excellence of sculpture, may be insured. Sculptors generally make their studies from wet drapery, as in that state the forms, over which it may fall, are more distinctly marked, and its effect is considered better adapted to the requisitions and capacities of their art.

12. Reliefs are most commonly modelled on a ground of slate, or some such material, to which the clay may adhere with sufficient tenacity to render braces and supports rarely necessary, and which may not be injuriously affected by the dampness to which it is subjected.

For small reliefs in wax, grounds of glass, porcelain, or metal plates, wood, etc., may be used. Wax for modelling requires very little preparation. It may be tempered, according to the season and the nature of the work in which it is to be employed, by adding to it, while in a melted state, small portions of olive-oil, tallow, or lard, to which some artists add Venice turpentine or Canada balsam. At the same time its body and opacity may be increased by the addition of white lead, vermilion, or any other finely-pulverized pigment.

The annoyance which may be sometimes experienced in using wax, by its adhesion to the fingers and tools, may be guarded against by touching them occasionally upon a cloth or sponge slightly greased with oil. A little spirits of turpentine occasionally applied to the surface of the model with a brush, may at times be found serviceable. The tools used are similar to those for clay. In models for ornamental purposes, particularly for designs of a highly-elaborated character, to be executed in metal, wax is most generally preferred, as it admits of application to any material to which it adheres very firmly. Thus any required design may be added or adapted to a given form with the utmost facility.

13. To form a mould, and therein a cast in plaster from a clay or other model, is a process extremely simple, yet one requiring so much caution and judgment, as well as practical experience,

that we would by no means advise the experiment of a first attempt in any case involving peril to the result of much pains and study, unless the services of a professed moulder can not be obtained. The operation once witnessed, an artist will find little difficulty in conducting the process himself on any future occasion in which he may require to do so.

Further finish of the model may be often advantageously effected in the plaster, if required. In large or complicated works, this may be not only a very great convenience, but in many cases absolutely necessary. Parts and details of statues or groups in plaster, such as heads, limbs, etc., may be removed from their places and wrought upon separately under some circumstances with greater facility than in the position they occupy in the composition, to which they may be refitted without risk or difficulty, by means of bolted or other joints. The entire process of a model is sometimes conducted with plaster alone.

14. Small models, particularly reliefs, may be very successfully reproduced in copper by the galvano-plastic process, and by the same means they may be very effectively gilt or silvered, or perpetuated in gold or silver, with an economy in time and expense of labor and material, rendering its application of the utmost value in many of the ornamental arts.

15. The chasing or sinking of dies for medals was formerly a long and laborious process, which, by the aid of the electrotype and mechanical improvements in the turning-lathe, has been rendered not only extremely simple, but the spirit and integrity of the artist's design are preserved thereby in much greater perfection.

From an electrotyped duplicate or mould in copper of the original model, which may be much larger than the intended medal, another is made of cast-iron, which serves as the guide to the peculiar action of the turning-lathe, whereby an exact copy is produced in soft steel, and of any desired dimensions. The steel die, after being retouched and finished, is hardened for the process of striking in the usual manner.

16. Architectural models are made in various materials, such as wood, cork, card-board, plaster of Paris, etc. Plaster is generally preferred for those in which the repetition of much elaborated detail occurs. By it mouldings, columns, and other ornaments, as well as more massive parts, can be formed, both by casting and carving, with great facility; and the effect of the whole may be increased by the addition of the proper colors, either combined with the plaster or afterward applied. Capacity to construct or to direct the construction of an architectural model, must be, of course, possessed with that for its design and actual execution.

17. The importance of modelling, not only as a means of artistic study and production, but in the application of design to mechanical and other purposes, should not be estimated by the comparatively limited space which we have expressly devoted to the subject. To be able to make a sketch, or even an elaborate drawing of a design, is not always sufficient either to mature its invention, to adapt it to a requirement, or to test the accuracy of conclusions; nor always to afford data sufficiently reliable and intelligible to direct with certainty the executive labor of others. Much time and pains, too frequently wasted in misdirected experiment and vexatious failures, might be well saved to mechanics, both masters and workmen, by precisely that sort of preparatory study and clearly-expressed decision of purpose by which the sculptor insures the comparatively easy and successful execution of his design, and by which he is enabled effectively to command the skill and labor of others.

18. Here it may occur — more aptly perhaps, than on any other of the few remaining pages of our work — to acquit ourselves of having supplied aid to those whose requirements in design may have special reference to the industrial arts, to an extent that may not appear to those who may have superficially glanced over its chapters with the expectation of finding the subject separately treated. Had it been our purpose to adapt our work exclusively to the requirements of the mechanic, it would have been requisite to have insisted upon a similar course of training in the elementary principles of design, both theoretical and practical, and to have exemplified their application in the finer arts, to have placed him in possession of their just comprehension, or of capacity to adapt them effectively to his purposes. To be capable of availing himself of the assistance of design, the mechanic must become an artist to the extent that he may require artistic aid. Both must begin to learn in the same way, and both must pursue a similar course of elementary training; from which they can only safely venture to diverge when they have reached a period of advancement by which they may be prepared effectively to apply their knowledge and practical skill to their individual purposes. The intelligent mechanic, whose mind has become imbued with artistic feeling and impulse — whose hand has been trained to artistic accuracy of expression in design — and whose sensitiveness to the harmonious consistency and beauty of Nature has been awakened — will no more need a special teacher to direct him in the application of the laws and precepts hence to be derived, and common to all art, than the painter or sculptor.

CHAPTER XI.

OF COMPOSITION.—HINTS ON METHODS OF ORIGINAL PRODUCTIONS, ETC. CONCLUSION.

"Every man, that can paint at all, can execute individual parts; but, to keep those parts in due subordination, as relative to a whole, requires a comprehensive view of the art, that more strongly implies genius than perhaps any other quality whatever."—REYNOLDS

EVERY work of art, which is not a copy of another, may claim consideration as an original composition, from an attempt at imitation of the simplest object to the embodiment of the ideal, and ranks in estimation in proportion as the inventive faculties are more or less elicited, and successfully exerted, not only in realizing its design so far as to render it intelligible to others, but also in bringing the utmost effort of genius, and power of art, to bear upon its perfection. In the consideration of a picture, or of any work of art, a motive, or subject, is implied; and clearly to express such motive should be the leading object in its composition or arrangement.

2. It might appear that any one who could draw, paint, or model, having a subject before him, or a clear impression of it upon his mind, would have nothing more to do than to copy what he sees, or to express that which he imagines. This would be true, if Nature and the imagination always aptly met the requirements and enforced no execution of art beyond its capacity. The power of art, it must be remembered, is limited; and, to preserve its congruity, its efforts must be necessarily restrained to its possibilities. Genius may occasionally strain to the utmost its limits, in violation even of consistency, and find allowable excuse and apology in the happy results of successful daring; but the privileges which, to a certain extent, may be allowable to genius, should be assumed with timidity. Those only can safely venture who are fortified with that strength and readiness in the expedients of art, which come not instinctively and coincident with the gift of genius, but as results of its earnest seeking and acquirement.

3. However it may be that emulation of the broad and general impressions of Nature, as they most forcibly affect the mind or excite the imagination, rather than the abstract and material elements which combine to produce such effects, form the higher purposes of art—as the means of its expression are, as in Nature, by combinations of subordinates, a thorough comprehension of and command over all such subordinates becomes absolutely necessary to the artist; this comprehension and command extending, not only to theoretical knowledge of their natures, and power of service to the purposes of art, but likewise to a masterly control over them in their practical application.

4. In the composition of a work of design, is understood to comprise its entire arrangement; and involves, according to the extent of its intention, whether in reference to desired effect, or method, or materials employed, its general *outline—grouping—effect of light and shadow—expression—color*, etc., all harmoniously agreeing together, all directly bearing upon its *motive* or *subject*, and combining to convey an effective and agreeable as well as obvious impression thereof.

5. The first requisite, therefore, of a composition is, that it should tell its story. It matters not how exalted or how insignificant its motive may be, on this point there should be no grounds for doubt or question. The humblest bit of still-life that may be selected—a book upon the table—a fruit, or flower—a weed, or tree—a rock, or mountain—a glass of water, or a lake or river—a rippling brook, or a foaming cataract—a head, a limb, or a figure—anything—singly or combined, whether in their natural arrangement, or artistically composed as principals or subordinates in ideal creations—may be motives or subjects of a composition, so long as they preserve primary importance therein, and form by the scale of their significance and value that of the art which may attempt their representation. The feeblest effort of a child to imitate upon his slate an object which he sees, remembers, or imagines, and the most sublime and successful achievements of cultivated genius, differ only in ambition of attempt and amount of capacity exercised.

6. What story, it may be asked, has a bit of still-life, a portrait, or a landscape-view, to tell beyond that which it brings with its presence to the artist? What composition or further arrangement is required? Do not the subjects themselves afford all the composition ready to his hand? What else is there for him to do than faithfully to imitate that which is before him?

Let us take the table before us, in its confusion of books and drawings, papers, pens, and commonplace conveniences, of an artist's studio. Not a very promising or interesting subject for a picture, it must be admitted; but for a tempting basket of freshly gathered boughs of fruit, which

have been brought in to serve as studies for the accessories of a picture on our easel. To draw or paint it precisely as it is, a motive might be sustained in that of an exhibition of the confusion and anomalous character of an artist's table, but even that would be done at the sacrifice of many important requisites in a picture. By selection and arrangement—by *composition* of its contents, as a whole, or into groups and subjects—by giving to almost every object, in its turn, a prominent position—by exhausting the power of art in fidelity of imitation of that which may be in itself insignificant, and thereby elevating it to the consideration of a subject for a picture—the range of service to which this confused assemblage of objects might be appropriated, as leading motives, or as accessories to pictures, may surprise the learner to his profit by practical experiment, and exemplify many important principles, as well as expedients available in art.

7. It is not alone in subjects of an elevated character that the exercise of genius and artistic skill is most requisite. In all there is the requirement of not only an appropriate but pleasing and effective arrangement, or composition, based upon similar principles. It is the want of this which makes the difference between a carefully-studied work by an accomplished artist and the tame and unmasterly attempt at mere imitation of the uneducated. It is this that may give to the most insignificant subject by the one an excellence by which it is received and valued, while the more ambitious effort of the other may not only signally fail in producing a favorable impression, but often degrade the motive itself to the ridiculous. Thus have the Flemish, and artists of other schools, in their subjects from scenes of the lowest life, not unfrequently of themselves of a repulsive and even disgusting character, by the power of their art diffused a charm over their compositions, not only to win the admiration of the most fastidious, but to give to their productions, as works of art, rank with those of more refined taste and higher motive.

8. Few subjects bring with them at once to the portrait-painter's chair all that may be required for faithful resemblance. Those who have practised this branch of art know this full well. Characteristics of action and expression require, in almost all cases, to be elicited by study of the original—to be caught, as it were, in momentary transitions—and, by a happy arrangement, or composition of the picture, to express such characteristeric traits in a manner that the portrait shall be more than a mere representation of the individual features of the original.

9. A landscape-view may be strikingly effective in nature, and in its details as well as general characteristics afford ample materials for its representation; but, to bring the resources of art to bear practically and efficiently, more is required than close imitation. He who attempts to pro-

duce in a picture, by minute and servile imitation of details, the broad and emphatic impressions of Nature, will as assuredly fail as he who essays to reach the higher excellency without due regard to the means by which she expresses herself. However these means may not be obtrusively evident to the common observer—as they should not be in a work of art—yet, if sought for, they may be found in the one as they should be in the other—all in just subordination, according to their importance as primary or secondary in the consideration of the motive or subject of the picture. There is no branch of art in which the exercise of proper judgment and skill in composition may be more happily exemplified than in landscape. Thereby the landscape-painter is enabled to elevate his art to a merited rank far above that of mere portraiture, and to bring successfully the ideal within its compass. Thus may he indulge his imagination in allowable combinations of the actual in Nature, and collect the diffusion of beauty which prevails throughout her works, in imaginary pictures possessing all the truth and consistency of reality. Thus may he, even in his representations of actual scenes, exercise allowable license in the arrangement of accessories and effects; and, by adding to the reality that which might consistently exist, or by the omission of that which may be unnecessary or prejudicial to the effectiveness of the whole, or to individual and important features, not only give more forcible and agreeable expression to his picture, but at the same time sufficiently preserve its general characteristics to retain its resemblance, and even to add to such resemblance an impressiveness beyond that of the original subject to an ordinary observer.

11. To bring the expressive power of Nature within the availabilities of art, its resources must be rightly understood and employed, its inefficiencies assisted, and its utmost strength elicited. These should be considered important and leading objects in composition. All the expedients which may be allowable in portraiture in one respect may be equally so in another; and violations of propriety, and truth of resemblance, affect all cases with comparatively injurious consequences as they more or less affect the broad and general impressions of Nature. The artist, therefore, should be ever mindful that the great object of art is to convey such impressions, with all the force and expression of which it is capable; for, by them, as well in the presence of Nature as in the memory and recognition of her truths, art is received and estimated, not only in reference to portraiture of existing objects, but also with regard to ideal creations. Ideal efforts are but the application of portraiture to imaginary models, or impressions, existing in the artist's mind; which must be based upon familiarity with the realities and truths of Nature, and brought as palpably within the compass of his art as if they were before him, ever to be realized, or to be made intelligible to others by its means.

11. All striking effects and picturesque combinations in Nature are distinctly marked by that which artists designate *composition*—whether of *form*—*light and shadow*—*color* or *expression*—or of all together. As relates to the *form*, or general arrangement of such compositions, the impression on the mind is very apt to assume some conventional shape, by which they are technically designated and recognised. Hence the terms *circular*—*angular*—*diagonal*—*horizontal*, etc., as applied to compositions. To insist, however, that the excellence of a composition requires the adoption of one or of the other of these shapes, would be as absurd as to contend for the superiority of either class, or to argue for its unconditional acceptation as a general rule.

12. A range of hills encircling a lake or plain—a sweep of seashore—a group or groups of figures—or a multitude assembled around a central point of interest or action—and in many other analogous cases—the natural arrangement may be obviously associated with the circle. Such being the impression upon the mind of a scene in Nature, by which its general features would be marked and retained upon the memory, and by which the fidelity of its representation by art would be received and judged, it is important that the artist should not only conform thereto in its portraiture, but even if necessary emphasize such characteristics; at the same time guarding against affectation or ostentation of the means by which it is effected.

Equally obvious may be the association of other forms of composition with actual scenes or events, and with equal propriety their representations should not only be marked by such peculiarities, but the truthfulness of ideal creations requires the preservation of like consistency.

13. The peculiar shape of a picture, and its adaptation to a given place or purpose, may have a very important influence on its composition; while, on the other hand, the character of the subject may as well regulate the form of the picture. Too little consideration is commonly bestowed upon this point. Thus does it occur that we often see strips of landscape oppressed with unnecessary and unmeaning expanses of sky, while the eye is refused relief by an agreeable extent of horizon. Groups and other objects are frequently cut off by the frame in a manner to produce the most unsatisfactory impression; while the corners, especially of circular compositions, are often as painfully in the way of the observer as they have evidently proved embarrassing to the artist. Equally inharmonious may be the effect of angular compositions in works of a circular or elliptical form. The shape and composition of a picture should as far as possible harmonize, not contrast with, one another, and the selection of both should be consistent with the subject.

14. It is much easier to discover upon what general principles of composition a work of art may have been perfected—whether they relate to its general arrangement, or its peculiar effects of

light and shadow, or of color—than to predicate thereon a rule or recipe by which another may be done as well. Many of the best productions of both ancient and modern masters admit of very allowable classification, yet others seem to set at defiance all attempts to do so under any technical head. In some, the keenest academic and critical acumen is often at fault in endeavoring to investigate and discover the secret of their successful execution, and to reduce it to rules or maxim. Thus, in attempting to establish the premises of the *circle* for a composition, the *pyramid* may be developed, which may lead to the *diagonal*, and so on, until we find ourselves involved in a labyrinth of difficulty from which we may be glad to escape, by closing our books and theories, and admitting the independence of genius of all such arbitrary laws. In granting this admission to genius, however, the possession of qualifications to reach its aims, by means which it can alone derive from cultivation, is implied, and without which its noblest impulses supply but in a very limited degree the requisitions for successful achievement.

15. The elementary character of our work, and the means of exemplification at our disposal, preclude the possibility of treating the subject of composition in design with sufficiently plausible hope of rendering thereby practical aid to the learner to warrant the attempt. A volume would at least be requisite for the discussion of the subject, and numerous and varied illustrations, not only in reference to forms and outlines, but also examples of delicate gradations and effects of light and shadow and of color. And, after all, it may be well questioned if we could do justice to the reproduction of the standard works by eminent masters of the past and present, which we should select—if more real service, in a practical point of view, might not be rendered by placing them before the art-student, and by leaving their investigation and study to his own intelligence, than by endeavoring to deduce therefrom rules and precepts, which, as arbitrary rules and precepts, may be well doubted to have had much if any direct influence in the execution of the very examples upon which they might be, however ingeniously and plausibly, predicated.

16. To the study of standard works of art, based upon that faith in their excellence with which they should be regarded by the student, he may most confidently look for available sources of knowledge, not only of its ways and means, but of its consistency and practical application to Nature, and as well of Nature to art. It is from their study that he must learn to estimate their merits and defects, and, justly balancing both with an enlightened and unbiased judgment, to reduce his investigations to safe and reliable precepts and maxims suited to his individual requirements. Such will profit him far more than any to be obtained in books.

We would not, by any means, be understood as insinuating that much valuable assistance in

such study may not be derived from books, especially those of a practical rather than a merely critical character. However it may be regretted that so few comparatively of the great masters of art have left written records of their experience, and with especial reference to the practical methods and principles by which they were governed, quite enough has been done by them in this respect to leave little now to be said upon the subject—quite enough to convince us that there are no secrets to be discovered worth the trouble of searching for—that the way to excellence is plain, and open, and free, to all—and that success is as surely the reward of earnest industry and faithful seeking—now as it has been always.

The art-student at every period of advancement—and all artists are and should be students, both of Nature and of the works of others—can not be too strongly impressed with the importance of self-exertion, and of the baneful influence of too great reliance on either books or teachers. From this error may be traced too frequently the enervation of the strength of the most vigorous, while it may have an equal tendency to deter the timid from attempt. Thus many fertile minds, naturally endowed with pre-eminent capacity for artistic achievement, have been, by unwholesome restraint, or misdirected guidance, diverted from a course consistent with their individual impulses and qualifications, which, if pursued aright, might have attained to the perfection of one of the highest privileges, purest enjoyments, and most productive capacities of good to mankind, as well as to the possessor, that Providence has placed within the reach of human attainment.

One of the leading purposes of education in art should ever be to preserve the natural impulses and energies unimpaired, and to adapt instruction to their natures; to foster a sensibility and just appreciation of wants and imperfections; to train the mind to proper judgment in the application of correctives, and to the appropriation of the experience and knowledge of others to its profit. Thus may the learner become even from the beginning capable, to a very great extent, of self-direction. To say that one is, or may be, self-taught, means no more than this; and it is in such a sense that nearly every artist, who has ever attained to eminence, may be said to have been self-taught: for all the instruction that can be given, all the aid that can be derived from Nature, or from others, unless it pass through the mould of a well-ordered mind, and become stamped with its individuality, will otherwise avail but little.

17. It may be not only interesting but profitable, to the learner, to know more of the methods and expedients most usually employed by artists in the execution of original compositions than we have hitherto had the opportunity of presenting.

The idea, or motive, of an original work, may be often founded upon a slight sketch, dashed off perhaps at the moment of its first impression on the mind of the artist, and embodied by a few

apparently random lines, made with pen or pencil, chalk or charcoal, or anything of the kind within his reach, or by a plastic model. Possibly it may be expressed in color, as frequently occurs when some striking effect is connected with its suggestion.

It would be difficult, in many cases, to trace a first impulse or conception to its source; for, at times, to a fertile imagination, they would seem to come spontaneously, or to be so slightly affected by extraneous causes, that the artist himself may be scarcely sensible of their influence. Such impressions must be necessarily indefinite, broad, and general in character. The sketch, perhaps, may even embody all that exists of them at the moment. In pictorial or in plastic subjects, connected with historical incidents, or with the ideal creations of other minds, the first suggestion may come in a more definite shape to the artist's imagination. That it there receives a remodelling, an individuality of character, and becomes as identical as an original thought, to a very great extent, is evident from the fact that, if any number of artists were to attempt the illustration of a given subject, they would all be different. Their similarity would be greater or less according to the facts and details by which they were restrained. Thus it frequently occurs that such facts and details, whether historically associated with the subject, or the inventions of another, may be most perplexingly in the way of an artist in the adaptation of his art to their exactions. That which may be most effectively expressed by language does not always afford suitable subject for art, and the best subjects for illustration are those which leave a fair and unembarrassed field for the exercise of the artist's skill.

18. It is not always essential that the first impression of a subject of the mind should be embodied by a sketch: if it be there sufficiently defined to form a reliable starting-point, it may be enough. A sketch is but the material evidence of its existence, which, however faint, imperfect, or unintelligible to others, may possess a clearness and impressiveness to its author, rendering it to him at least invaluable. Such memoranda, therefore, however indefinite and rude they may be, should never be destroyed; and no thought or impression, whether original or suggested, that can be thus preserved, should ever be allowed to escape unregistered. For want of this habit of appropriation of its fruitfulness, many a mind naturally fertile has become early and profitlessly barren, while others of far less promise have been made thereby abundantly productive. In the more mechanical operations by which an original sketch may be carried out, and by which its motive may be rendered more intelligible to others, as well as in the severer ordeal to which it is necessarily subjected to meet the requirements of artistic accuracy, it is often extremely difficult to retain its spirit, or realize its suggestive promise. Hence it will be always found serviceable, in the progress of the work, to possess the advantage of recourse to it—thus leading us back, as it were, to our

starting-point, and profitably reviving its broad and vivid impressions, the impulsive tendency of which it is always of the first importance to preserve.

19. The dash and decision of execution which so frequently attracts our admiration in works of art, in which the will and the way of their accomplishment appear as a single impulse, are often more the result of preparatory study and forethought than is generally suspected. If a first sketch should not prove satisfactory, it is better to attempt another than to destroy it. If alterations, or a test of certain changes, may be suggested, or appear requisite, instead of making the experiment upon the original sketch in a manner that may irrecoverably affect its general character, such a course is always most advisable. The effect of alterations in pictures may be very readily tested in most cases on panes of glass suspended by threads, or otherwise, over the part upon which it may be desirable to experiment. In drawings, in like manner, transparent paper may be very successfully employed; and when the expediency of corrections or alterations is decided upon, the whole may be recombined by tracing. Recourse to such expedients is much better than attempting changes and erasures, until we are satisfied of our ability to supply preferable combinations. Thus leaving the way to excellence well marked and open, as much by records of difficulties encountered as the operations by which they have been successfully met and overcome, we learn to know it better, to pursue it with surer steps, and reach its aim more certainly.

20. Upon the basis of a sketch or generalized indication of the subject of a composition, it is the custom of some painters to dispose its arrangement upon the canvass with chalk or charcoal. In doing this, all its parts and details are thoroughly studied, securing their premises when necessary by reference to Nature. Directly thereon, or upon such under-preparation as they may consider requisite, they proceed to paint at once from living and still-life models, cautiously observing to preserve throughout the general propriety and unity of light and shade, of color, perspective, and effect.

Others, instead of painting on their pictures directly from models, adopt the course of making preparatory studies of those parts in which they may require the immediate assistance of the model, even to draperies, still-life, and the minutest details. Thus fortified—with all their resources, as it were, spread out before them—they set to work in a more deliberate and systematic manner. The results of this course, however more business-like it may appear, are often deficient in that freshness which the immediate presence and more direct translation of Nature impart; while, on the other hand, less risk is encountered of the individuality of the model becoming obtrusively predominant, and prejudicial to the general harmony of the picture. Not that it should be

implied that there is a possibility of over-doing the truthfulness of our representations of Nature; but that we should endeavor to preserve that truthfulness, in all its integrity, by representing Nature as it really would appear, affected by the peculiar influences of its position in our composition, rather than if viewed abstractly, as necessarily may be the case when employed as a model.

21. It is rarely that all the parts of a composition can be copied directly from models; hence discrepancies between those in which we have been thus assisted, and those supplied by memory or general observation, will constantly occur: to guard against which, the acquirement of facility of management, and right appreciation of the services of the model, are of great importance, and only to be obtained by expanding our comprehension of the broad and general characteristics of Nature, by investigating study, and thus learning the true value of her abstract peculiarities, as consistent and accessory thereto.

It is not difficult to determine wherein lies the inconsistency, when we hear artists complain that "Nature puts them out." It can only be so when our requirements of her exceed the limits of propriety. He who looks to Nature as he ought, and seeks no more of her than her truths, will rarely encounter such embarrassment, or meet with difficulty in finding models fully answering to every requirement. If he can not have the individual thing itself, he can always find something analogous in its general character to serve his purpose. It is this faculty of appropriation of the vast resources of Nature, and of making them subservient to the purposes of art, that constitutes the strength of the educated artist. He sees, with expansive vision, beauty and good in everything, and, rejoicing in his high privilege, goes with confidence to Nature for all his wants; and no one who has thus learned to love and reverence her as gratefully and truly as he values her precepts—who exacts of her no impossibilities, nor endeavors to force her to unwarrantable subjection—can ever be "put out by Nature."

22. In the earnest employment of conveying back and forth, between the model and our composition, abstract observations, comparisons, and conclusions, the eye is apt to lose, in some degree, its sensitiveness to broad and general impressions; to preserve which, may often require the exercise of much firmness of judgment, as well as of practical skill. This difficulty and misleading tendency will be found more generally to occur with those most eager in the attainment of minute accuracy of representation; and hence their works, however perfect they may be in detail, not unfrequently fail to produce agreeable impressions as a whole. It is better, therefore, to secure the broadest and most prominent masses of a composition first, as they may relate to either form, light and shadow, or color. Thus we become fortified by familiarity with the leading character-

istics, their bearing and influence on the general effect of our composition, and are less liable to allow undue preponderance to subordinate parts and details. When we draw, or paint, or model a feature, we should not forget that it is the component part of a head—a head, that it should in all respects accord with the figure—a figure with its group—the group with the leading motive of our composition—the whole with Nature. Not Nature brought in, as it were, in loose, discordant fragments, and promiscuously combined together, but Nature in all the harmonious beauty in which she yields herself with gentle and confiding grace to the imitative power of art.

23. There is a fascination in the presence of Nature—a something so winning in the exercise of the power of conveying her impressions, fresh and glowing with reality, to our creations, and the comparative ease with which certain individual characteristics can be imitated—that we are often led thereby to give undue preponderance to the subordinate portions of a composition. We forget, in our anxiety to secure all that we can of individual excellencies, that we may be losing the more important; and it is only when the model is no longer before us, but with its general impression still fresh upon the memory, that our error may be discovered. Hence it occurs, even with the most experienced, that the best service of the model is often secured in the hour devoted to "setting to rights" after its employment. It is then that the artist becomes more completely master of himself and of his resources, and, as it were, enters more really into the presence of his subject.

24. Such misleading tendencies are discoverable in a very marked manner in the first attempts of all beginners, to either draw, paint, or model directly from Nature, and especially remarkable in reference to the exercise of proper judgment of color and local tints. They almost invariably exaggerate the reality, and fail in giving due consideration to the various circumstances of light and shadow, distance, etc., by which subordinate parts of a composition may be affected. Even in a simple head, they paint the white of the eyes too white, the lips too red, as they do the sky too blue and trees too green in landscape, and it may be often difficult to reason them from their premises. Let them compare a well-painted head with the original model. The tints upon the cheek and lower portions of the face are as purely flesh-like, however subdued and broken by half-shade and reflections, as those exposed to the full force of light upon the forehead. Is there any palpable white in the eye? If there were, there would be no power of the palette left to approach that single touch by which its liquid brilliancy can only be imitated. Is the whole feature less lifelike and real, from the subdued and delicate half-tints and shadows which play around it, gently reducing the strength of its local tints, softening its outlines, and concentrating the utmost power

of light and dark in emphasized contrast at a point? No power of the palette can reach the expression of the intensity of light and dark of a living eye; and, little as there is of either, therein may be found the cause of its wonderful expressiveness, as well as the means by which it may be most nearly imitated. In the lips there are delicate combinations and gradations of color, as unattainable by white and red alone, as the varied tints of the heavens with white and blue. It is poor reasoning, because leaves are green, that we have only to mix our tints, as nearly as we can, to match those of one before us, to paint the tree. Observation, and the close study of Nature, will teach us to know better. The unskilful observer may not see with the acute discernment of the artist; although he may not look so closely to causes, he at least feels their effects; and the art that does not correspond to the general impressions of Nature—that can not be realized by the imagination—that appeals to it in unrecognised language—must ever fail in all high purposes, and receive but limited acceptation.

25. A custom, which prevails to some extent, of making elaborated cartoons for paintings in oil, however it may afford many considerations of advantage in respect to the perfection of their design and composition; yet, as is frequently the case, if the study of Nature be confined to mere form, and light and shade, their employment may have many misleading tendencies. The best tests of all methods are results arising therefrom; and it must be admitted that where the cartoon has formed the chief study and effort of the artist, the finished work rarely possesses the excellence of color of those executed directly from Nature, or from studies made therein. They are, in truth, often little more than tinted drawings. Could there be discovered in their excellency, either of design, composition, or other attributes, any one quality exclusively atttainable by a method which, if not discarding, at least places in secondary consideration, one of the most pleasing and important means of expression in art—could it be shown that all they possess might not be attained with the addition of truth and effectiveness of color—we might feel less hesitation in expressing an opinion adverse to a custom supported by high authority—the authority, however, less of successful achievement than of arbitrary schools. However true it may be that such may have been the practice of some of the most famous masters of art, it arose in a great measure from the peculiar nature and requirements of their works. For fresco, cartoons are absolutely necessary. When it can be shown, in evidence of their advantages for works in oil, that the oil-pictures of Titian, Paul Veronese, Correggio, Raphael, and others of the Italians—with Rubens, Vandyke, Rembrandt, and many more of the Flemish—and such as Velasquez and Murillo of the Spanish schools—are but indirect translations of Nature, through the comparatively dead language of black and white drawings—that to the cartoon we must look for the secret of their excellence—

when the advocates of the system produce by such means equal results, we may more reasonably dismiss our doubts of its advantages.

It does not follow of necessity that the employment of a cartoon, as preparatory study of a composition for paintings, should lead to injurious tendencies. It is the abuse of and too great reliance upon the practice against which we desire to guard the student. There is, in the execution of every original work, a story of incident and exciting experiment—a trial of strength, as it were, between Art and Nature—constituting the intimate and fascinating association between the author and his labors, which awakens and sustains that intensity of interest which expands to ardent love of his pursuits, and impresses the individuality of the artist's mind and character upon all that emanates from his hand. It is this that, while it gives impulse, lightens every labor, and without which the practice of art becomes reduced to a comparatively mere manual operation. The importance of cherishing this freshness of feeling, and sympathy between the artist and his creation, as well as the delightful association with Nature to which they direct, are obviously of value, not only as affecting the consolations and delight by which his executive labors are inspirited, but also most materially the perfection of his work. Such impulses are but partially realized by the mere copyist; and hence a copy, or even a repetition of a work by its author, rarely embodies the sentiment and expressiveness of an original production. To exhaust, therefore, the study and interest of a composition upon a cartoon in black and white, and to leave its completion in color to conventional and minor considerations, must inevitably injuriously affect its perfection in that respect.

The custom, common with many, of preparing their compositions by carefully-studied indications thereof in two colors, as groundwork for their pictures, while it may answer in every important practical point the requirement or service of a cartoon, obviates many of the objections which may be urged against its employment as the established premises of a composition for paintings, especially in oil. Unfinished works of many masters distinguished for both design and color, as well as documentary evidence to that effect, fully sustain a favorable opinion of this method.

26. Some artists carry out their preparatory studies to a still further extent, and not only make them in color—prepare their general composition by cartoons, and execute their finished works directly from Nature—but also prepare wax or clay models of important groups and masses, and sometimes even of the whole, which they arrange under all the circumstances of light and shadow, color and effect, in conformity to their design. The practice of thus employing artificial models has not been confined to works of a high historic character (chap. x., 3), by which great assistance may be received in the management of bold fore-shortenings and strong effects of light and shadow

—which often, especially in mural paintings, may be required to be adapted to a position in which a peculiar effect of light may require to be preserved—as, for example, beneath a dome, and in many other cases—but also in smaller works. The advantages to be derived from capacity to make available all expedients that can be employed to aid in the perfection of a work of art have been so repeatedly alluded to, that it is scarcely necessary to press its importance further. Those who seek with earnestness the means by which excellence may be reached, will find by trial the value of their possession, and will never regret the pains by which it has been obtained.

27. The diversity of methods employed by the masters of art, and their successful application by them, render it difficult to form an opinion of preference to one over another. That which may have succeeded most effectively in the hands of one may in those of another prove both embarrassing and inefficient; and the student should rather seek to adapt his methods to his peculiar capacity and requirements, than to endeavor to force upon himself implicit compliance with any one which may not be fully adequate to this only practical end of any process or method, however it may be recommended by high authority. Many are induced, from the successful results attained by certain methods and processes, not only to attach thereto undue importance, to the neglect of more essential requisitions; while others too often waste, not only many precious years, but the best part of a life, in profitless experiment therewith.

28. As to appropriateness of manner, or style of execution, in a picture, as in any other work of art, it is difficult to form a definite conclusion. "Style in painting is the same as in writing—a power over materials, whether words or colors, by which conceptions or sentiments are conveyed" —and is marked with the individuality and character of the artist's mind and impulses. A bold mind impels a daring hand, which finds its means of expression in a bold and dashing touch; while the more gentle and timid is as clearly indicated by its manner. The ambition of either to cast aside its peculiarities, or to assume those of the other, is rarely effectual; and, as these peculiarities often constitute, in a very great degree, the source of individual strength, it is far more wise to seek to train them in a way in which they may be more easily, because more naturally, directed to the attainment of excellence, than to attempt to force them into a contrary course. The discovery, therefore, of the most available sources of individual strength, is of the utmost importance, and, as it is often reached only by many trials and repeated failures, an early beginning is the more advisable. Thus the natural and most available impulses and capacity of the learner are allowed fairer opportunity of timely development, and, if not injudiciously restrained, will of themselves most likely direct to a course for which they are most aptly and congenially adapted, and

which may frequently require no small degree of courage and resolution steadily to pursue when discovered. Those who possess most sincerity and spirit of impartial investigation of their own qualifications, are not unfrequently most apt to undervalue their own peculiar endowments, and, in seeking the rivalry of qualities which they perceive and value in others, most culpably to neglect the cultivation of such as they themselves may possess.

29. The examples of the great masters of art show most clearly that it was not by striving to imitate the excellences of others, but by making them available to the development, cultivation, and perfection of their own, that they most successfully appropriated them to their individual advantage. It was fairly done; for it was with them no base pilfering of other men's ideas, discoveries, or rewards of labor. That which they took they gave back with interest; thus often rescuing from oblivion happy suggestions, slightly valued or perhaps overlooked even by those with whom they may have originated. To this end they also looked to Nature, and sought not only verification of the truthfulness and practicability of their peculiar impulses, but also aid to realize them by their art. Promptly, now as then, Nature will be found to respond to every requirement of true genius, and as surely to rebuke the affectation and inconsistencies of unwarrantable pretension.

We see, in the successful daring of Michael Angelo, the predominance of an original and colossal mind, bending all Nature as well as all hitherto-accomplished art to its mould; while gentle refinement, purity of taste, with the keenest discernment and love of the beautiful, from first to last, mark all the inspirations of Raphael's genius. The lifelike tints of Titian, glowing with an individuality of power and voluptuousness of feeling before unequalled, and as yet unsurpassed, may be contrasted, without detriment to either, with the soft and silvery tones of Correggio, harmonizing with a mind exquisitely sensitive to purity of sentiment, if not to the severest types of beauty of form. Thus might we go on to name, throughout the world of art, both past and present, examples of pre-eminence based upon the successful cultivation of individuality of mind and impulse, not only sufficient fully to sustain the opinions advanced, but to make it appear unaccountable that artists have not been more generally emulous of pursuing paths of their own than of endeavoring to follow in the footsteps of others.

It is very certain that none have ever reached distinction of whom it can be justly said that such was their course. Many may have received direction, or have varied both their styles of composition and manner of execution from impulses induced by the observation and study of the works of others; but this has always been most successfully effected by the enkindling of a latent capacity which only needed thus to be developed, rather than by the desire or purpose of either ambitious emulation or mere servile imitation. In many cases impulses thus given have resulted

in the perfection of peculiarities of style often far surpassing those whence they received suggestion.

The history of the difficulties, disappointments, and success of all artists, invariably points to the importance of a good beginning. Many may have fortunately received this induction from early associations, or judicious direction; while others, who have started upon the strong impulses of great natural abilities and energy of character, without it, have been driven to the painful and mortifying necessity of retracing their steps, fairly back to the beginning, whence they should have derived their reliable strength to have borne them onward successfully. Bolder spirits, with a determination worthy of a better fate, have battled through life in accumulated difficulties to its close; while others, lacking the courage to grapple therewith, and industry required to surmount the obstacles common to all beginners, have vainly exhausted more toil for the discovery of easy ways than would have secured to them available strength and capacity if judiciously directed.

It is not alone by the study of the works of other artists that the student may reap advantage, but also from their biographies gather much that may be valuable and suggestive for self-direction. Familiarity with the difficulties with which they have contended will make lighter the burden of his own; and in the perseverance and industry, the singleness of purpose, and love of their vocation, which mark their careers, he will be ever reminded of the only reliable means by which his own hopes of success can be realized.

30. In directing the attention of the student to the value of study of works of art in connexion with that of Nature, a necessity of seeking them out of our own country does not follow. However there may not exist at present in America such extensive galleries and collections of standard works, both ancient and modern, as may be found in Europe, there are sufficient to meet far more than the requirements of a beginner, and quite enough of living, productive talent to give both impulse and direction. This once secured upon a basis of proper training in elementary knowledge of and practical familiarity with the leading principles of design—and, further, with capacity exercised and expanded to original production—it may be then time enough to seek abroad for more ample sources of knowledge and higher examples of art than can be found at home.

Let not the American boy who aspires to attainment in art beyond that of a mere accomplishment or accessory to the various purposes and pursuits of life in which it may be available, be disheartened by the imaginary want of facilities placing him at insurmountable disadvantages in comparison with the art-student abroad. It is an illusion that should be dispelled. The advantages of foreign study, until a certain period of advancement has been attained, are very doubtful. It is at least certain that one who has not mastered the first practical difficulties of a beginner—

whose impulses have not been sufficiently matured to enable him to do so with well-understood purpose, and with a distinct comprehension of the nature and extent of his requirements, and who is not capable, to a very great degree, of self-direction in their attainment—has still much to acquire before he is prepared to go abroad. All this, and more, he can as well, if not better, obtain at home. Profusion of facility in the beginning, however more smooth and easy may be made the way of the learner thereby, may still, for that very reason, have very doubtful tendencies. There are periods of childhood and youth in art to be passed through, in which the strength and stamina requisite to assume a position of manhood must be gradually attained, and home is the place, above all others, where it is best and most healthfully secured. From the Nature we have first learned to love, and which has taught us to love art, and from our native land with all its associations, we should derive our impulses. That early association and familiarity with high artistic achievement, and the most unlimited profusion of facility for study, do not necessarily constitute the generating elements of genius, may be profitably considered in the fact that Rome, to which all youthful artists look with such ardent longing, foster-mother as she has been of so many men of exalted genius in art, can not claim one among them all, and boast that "he was a Roman."

31. It is not alone in pictures and statues, stately domes and high achievements, that either the impulses or evidences of the existence and influence of taste for art are to be discovered, but in its broader and more general diffusion, germinating beneath the sheltering influences of these its loftier monuments, and scattering far and wide its seeds of usefulness. The gift comes to us as blessed sunshine in the world's weary way; purifying in its influences, it reaches the perfection of all our resources of comfort as well as of our pleasures and consolations.

In awakening mankind to a sense of the importance of its cultivation as a requirement in popular education—in making its advantages accessible to all—it should be regarded as a matter touching the interest of every one. It extends its aid to the philanthropist in works of blessed charity and mercy; it gives to the public teacher the means of developing more perfectly the resources of the youthful mind and of directing it in ways best suited to its natural endowments—developing light by such happy adaptation, where otherwise might exist but darkness—an immortal mind benighted by division of its capacities from their true direction.

To teachers, above all others, we appeal in behalf of those under their charge. That which we want most is the general introduction of drawing in our schools; not as an accomplishment for a few, but for all. We want not drawing-masters to be sent for at the last moment of giving the finishing touches to fashionable education, by a course of "twelve lessons of an hour each;" but we want our children, of all classes, to be indulged in the inclination that God has

implanted in their natures to be encouraged and to be assisted. If the work be begun in time, it will be found as easy as to teach them to read and write and cipher. The benefits you will thereby confer on those for whose direction in the ways of practical knowledge, and for the development of whose capacities for usefulness to themselves and to their country, you are responsible, require it at your hands. Do it with steadiness of purpose and perseverance, and the result will prove that there is no affectation in the earnestness with which this appeal is made to you. Give our children but the benefit of this starting-point, and our men and women will accomplish the rest; and that, too, without the aid of self-constituted law-givers in art, or special and exclusive schools to preach doctrines and dogmas on the subject.

To exemplify the truth of the first line of our book has been our earnest ambition. Many can bear witness, by results attained through their perseverance, that our efforts have not been in vain. Some, we fear, may have been disappointed to find the requirement of exertion on their part greater than they either expected or were willing to bestow. To the latter we have only to express our sincere regret for what they have lost, with the earnest hope that they may think better of it and renew the trial. To the former we give our hand, with a brother-artist's warmest pressure, and bid them "God-speed" in their future efforts. May we live to learn of them!

Sally.

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